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ABSTRACT

In order to develop a humanistic approach to evaluating faculty, a pilot study was conducted of 27 students and 14 instructors in an associate degree program for medical laboratory technicians. Selected personal dimensions of the sample population were examined to chart each individual's personality, theoretical learning preferences, modalities of inference, and intellectual disposition. Faculty were additionally administered a Teaching Styles Inventory. The findings were utilized in an inservice training program which contrasted student and faculty learning styles with faculty teaching styles; as a result, faculty were committed to a more creative concept of quality and efficiency in teaching. Two strategies were employed in assessing the effectiveness of this commitment: first, students ranked instructors on a number of instructional practices; second, grade point averages were compared at entry and exit levels, revealing a significant rise. On the basis of information gained in the study, a Classification of Instructional Competencies was devised which categorized professional behaviors (technical, therapeutic, conative) in six areas (curriculum, instruction, evaluation, college service, professional activities, continuing education) into a series of detailed goal statements. A survey of the literature, bibliography, and cognitive mapping instruments are appended. (NHM)

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A Study of a Functional Approach to Defining Instructional Competencies and Measuring Faculty Performance in Medical Laboratory Science

LAURA ADINA WIESENFELD

A MAJOR APPLIED RESEARCH PROJECT
PRESENTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE DEGREE OF DOCTOR OF EDUCATION

NOVA UNIVERSITY

1975

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I certify that I have read and am willing to sponsor this Major Applied Research Project. In my opinion it conforms to acceptable standards and is fully adequate in scope and quality, as a Major Applied Research Project for the degree of Doctor of Education at Nova University.

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John A.

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To a greater extent than is usual, this thesis reports a major applied research project that was conducted somewhat in isolation due to the nature of an external degree program. However, this degree of independence is deceptive. During the planning, execution, and evaluative stages of the project the writer accumulated intellectual debts which are profound. The most immediate of these is to the writer's major professor, Dr. William Moore, Jr. He provided unstintingly of his time, professional expertise, and provocative insights. The writer is also greatly indebted to Dr. Philip G. Gearing and Dr. John A. Scigliano for their generous encouragement and direction.

In addition the students and instructors in the Department of Medical Laboratory Technology, who participated in the study, helped sort the writer's ideas into the conceptual framework which formed the basis of the study. And their interest and participation in the project activities heightened the writer's pleasure in its execution. She is most grateful to each of them for his involvement and contributions.

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ABSTRACT

In a functional approach to health technology education the value of exploring the humanistic relationships of the instructional climate was explored. This small pilot study of twenty seven students and fourteen instructors in an Associate degree Program for Medical Laboratory Technicians was based in the conceptual framework of the Educational Sciences. The intent of the study was a departure from the use of traditional judgment measuring instruments toward a decision making process based on information about the learners and their instructors.

For the purposes of this study students were differentiated from the class and teachers from the instructional process. Particularly in health technologies, the quality of the student's learning experiences will directly affect his opportunities for career advancement and the level of patient care he becomes capable of delivering.

In the light of the importance of working effectively with students, the value of utilizing cognitive mapping and detecting the intellectual dispositions of the sample population was pursued. Selected personal dimensions of the persons comprising the sample population were examined to chart each individual's modes of inferring meaning regarding his theoretical learning preferences, his modalities of inference, his decisionary mode of reasoning and his intellectual dispositions. These were assessed through the administration of inventories designed to measure these qualities.

The human adaptive responses of the individual at his operational level were organized into a conceptual framework for decision making purposes. The knowledge that man is a social creature and seeks meaning through modes of assimilating information based on his past experience required instructors and students to utilize their self awareness to create an holistic, humanistic learning climate in a conceptual framework visible to all.

This was accomplished by helping instructors determine their cognitive and teaching styles and students their cognitive and learning styles. Following a program of in-service training in curriculum, instruction and evaluation, the writer defined instructional competencies which instructors require if they are to create a viable learning climate for students. The writer defined the technical goals and objectives instructors require to teach their discipline, the therapeutic goals and objectives teachers use to influence students in positive ways and the conative goals and behaviors which express an instructor's will and intent to share fully in the academic process.

As a result of this effort and through the synthesis of their skills in the instructional process and based on their knowledge of student need, the faculty introduced a wide variety of teaching methods and visual aids.

The study revealed that the majority of students and instructors preferred the visual mode of learning. Accommodation for this factor caused the instructors to rely less on lectures and to plan experiences which used the visual preference to advantage.

Equally important to the study in planning this innovative approach to instruction was a means to assess the effectiveness of the treatment. Because this was a longitudinal study spanning a full term of instruction for sophomore students in their clinical phase, a comparision of the students grade point average at entry and exit levels was made. The entrance level was 2.91 and the exit level was 3.04, the coefficient of correlation was 0.387 and the overlap 14 per cent, significance was $p < .05$.

The investigator concluded that teachers need to be managers of learning and use their freedom and skill in sharing knowledge and that when faculty competencies are defined, accountability is automatically visible, and humanistically subject to examination.

The recommendation for further research into more sophisticated ways of charting the model by which individuals find meaning is based on the humanistic research tradition. When goals and behaviors by which student progress will be measured are designed, unless the goals and behaviors which instructors will require to facilitate learning are also defined, the instructional process will fail to be truly accountable. All instruction requires a suitable class of learners and instructors; new ways of ascertaining this are suggested in this study.

Chapter I

BACKGROUND AND STATEMENT OF THE PROBLEM

Introduction

Because in community colleges conflicts between administration and faculty frequently stem from their dissonant perceptions of faculty role demands and role performance, the intent of this study is to develop a non-threatening approach to defining faculty competencies. This focus represents a departure from traditional, judgemental measuring instruments toward a decision making process, which requires a harmonious interchange among teachers, students, and administration. It separates the teacher from the instructional process, and the student from the class through a process of assessing and classifying the cognitive strengths individuals utilize in teaching and learning.

Particularly in health technologies the quality of the student's educational experience relates directly to his later experiences of success or failure in one of the health services. Each student depends upon the faculty to prepare him adequately for entry into the clinical area. The issue, then, health technologists face is to define the instructional competencies which faculty need in order to serve students and against which instructors may measure their performance. Only when faculty express their competencies in relationships, and the effects these relationship have upon students, will faculty have a visible accountability of their intent and practice.

To be workable, a process, which is designed to meet the evaluative accountability requirements of health technologies, must be based on the human adaptive responses of the individual at his operational level in the academic environment. The nature of the allied health professions requires its faculty focus on their interaction with students, the clinical health professionals, patients and the college administration.

Health technology faculty are deeply concerned about professionalism and in a very real sense, they are servants of several demanding masters, who must be brought into a compatability which enhances the student's development. Only when the health technology instructor practices dually as a health professional and educator can this meld occur.

Theoretical obligations of medical laboratory sciences, the health technology discipline in which this study was placed, require a high degree of teaching and learning. Two emphases were maintained in this study: the teacher as an instructor and the teacher as a person who must function in an academic environment which extends into the clinical area.

Assuming that the particular abilities, values, skills, cognitive style, teaching style and competencies of a medical laboratory technology instructor affect the level, quality and quantity of instruction, it is vital to know precisely what these are. Ultimately the program graduate will experience success at work if he has been able to tap this source with adequate skill. Inasmuch as the community college has accepted the responsibility for preparing a range of middle level allied health professionals and technical nurses, the humanistic process developed in this program will apply widely. Most aspects of this study will transfer to other programs of study.

In a humanistic approach to instruction, evaluations based on competencies acquire relationships which are understandings as well as tools. A faculty should confirm, and periodically reconfirm, its commitment to offer instruction of excellent quality to students. If this is to happen, teachers must be given opportunities to develop the resources they require for involvement in decision making and curriculum planning. A conscious intent to involve faculty should undergird the process by which faculty competencies are defined. When criteria are readily understood by the faculty then hopefully, the criteria can serve later as a fair basis for assessing competencies.

In the health care services, as in all other disciplines, the assessment of meritorious instruction includes the instructor's ability to communicate with students, recognize learning problems, specify goals, plan curriculum, define learning performance objectives, and diagnose and reassess what is relevant to the clinical situation. Finally the instructor must be oriented to a problem solving system which synthesizes the information about each individual's cognitive styles and personal dimensions to implement the goals and objectives of the institution.

Professional people grow when they practice their profession. Professionalism requires the teacher to identify his strengths and weakness and to know himself and his students on more than one dimension. Having obtained this knowledge, the instructor must diagnose his students' needs in relation to their educational aspirations. Only through this process can an instructor act selectively to the limitations and aptitudes inherent in the gamut of student - teacher relationship. No matter how large the class, each student perceives instruction as a one to one relationship.

The problem which educators have failed to attack in sufficient depth is not whether teachers should recover their waning sense of subjectivity and personal identity but how. In the "Professional Education of Teachers," Combs et-al (1974) present a perceptual, humanistic approach to effective teaching. Their point is that the instructor who tries to behave in ways he does not understand or in a role unrelated to himself will find frustration not fulfillment in his academic life. [1]

Cohen and Brawer give some precedent setting guidelines which are useful for assisting teachers become professionals not only in their subject fields but in educational skills. [2] This approach encourages teachers to relate more wholly to their total environments. If instructional performance depends upon the integration of teaching skills with a helping humanistic relationship then it is important to change our emphases to the interaction among teachers and students. How to do this is the thorniest problem. Accordingly, the purpose of this study was threefold:

1. to develop a process for defining the instructional competencies appropriate for allied health faculty, which might serve as a general purpose process;
2. to examine the process by exploring the humanistic relationships in teaching and learning;

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[1] Arthur W. Combs, Robert A. Blume, Arthur J. Newman and Hannelore L. Wass, "The Professional Education of Teachers," Allyn and Bacon, c1974, p. 35.

[2] Arthur M. Cohen and Florence B. Brawer, "Confronting Identity: The Community College Instructor," Prentice-Hall, c1972.

3. to define instructional competencies in a non-threatening atmosphere for evaluation purposes.

Yarrington pointed out that the deficiencies which plagued many in-service training systems were the threefold lack of understandings of the decision making process, the definitions of emergent requirements, and a lack of appropriate designs.[3]

Significance of the Problem

Professionalization of a faculty requires standards of professional behavior which urge teachers to place a high priority on firmly defining the kinds and degrees of awareness and skills students require. Indeed, characteristically health technology instructors fulfill this responsibility surpassingly well. The gap in the system - that remained to be done - was to define the kinds and degrees of awareness and instructional skills health technology instructors require if they are to create a learning climate in which their priorities for students are clearly visible to the learners, themselves.

Instructors should place an equally high priority on a decision making process which involves them in an in-service training program, whereby valid curriculum decisions are reached; and through which the faculty can define, practice, and improve their instructional skills. The degree to which they are involved in the decision-making process will be reflected in their acceptance of it for evaluation and their use of it for self-improvement.

A faculty evaluation scheme which asks instructors to practice their profession through the synthesis of their cognitive and affective skills leads to humanistic, functional, and effective teaching.

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[3] Roger Yarrington, Facing the Critical Issues, Community and Junior College Journal, November, 1973, pp. 8-9.

Faculty can achieve this goal only when they assess their own and their student's capacities and perceptions.

Few instructors would deny that criteria for measuring faculty performance must reflect professional standards. The problem appears to be, whose standards? Instruments which are data probes will give faculty descriptions of their strengths and ultimately provide a communicative channel whereby recommendations for faculty improvement can be made. When professional criteria are freed from punitive consequences they can serve to enhance professional growth.

Rating instruments mirror an institution's values and patterns of behavior, therefore faculty must be concerned with evaluative schemes however ill - conceived they may be. Obversely when faculty synthesize their cognitive, affective, and teaching styles to cause student learning they conceive the process from which faculty evaluations properly stem. This supportive web of relationships integrates an individual's personal identity with his sense of professionalism.

The necessary subjectivity, which meets the needs of individuals, can surface only in a community of scholars working together to use objective criteria in a humanistic process. Until educators have done their homework in developing and learning how to optimally utilize the resources of the individuals in the community college, the college will not achieve the maximum benefit from its technology and resources.

Statement of the Problem

The problem is to define instructional competencies by means of an educationally defensible process and against which one may measure faculty performance in medical laboratory science.

The basic tenet of an educationally defensible process was considered to actively involve the instructors and administration in a cooperative endeavor. The solution sought was a process whereby the components of instructional competencies were designed to facilitate learning, including teaching activities; to utilize the dynamic of interaction; and to apply appropriate learning theories.

Definition of Terms

Attitude: Mental posture. A learned predisposition to react consistently in a given manner (either positively or negatively) to certain persons, objects, or concepts. Attitudes have cognitive, affective, and behavioral components.

Cognitive Map: (Tolman) A perceptual representation of the maze which an organism develops, based on environmental cues and the organism's expectancies, which teaches him the location of his goal.

Cognitive Mapping: The use of the data obtained from a battery of tests and inventories to determine an individual's cognitive styles.

Criterion: A standard stated in objective terms by which achievement or mastery may be judged, (and/or limited).

Educational Cognitive Style: The various ways in which an individual seeks for meaning or knowledge, how he takes note of his surroundings and how he becomes informed.

Faculty Evaluation: A process of measuring outcomes in functional, humanitic, and cognitive terms which will improve the bonds between the evaluation of student learning and the evaluation of instruction.

Medical Laboratory Technology: Applied medical laboratory science is the theories, principles, and techniques performed in a clinical laboratory and the use of the values obtained thereby by physicians in diagnosing disease and monitoring therapy.

Objective: A statement of behavior or responses which delineates whom, what, degree or extent, and condition.

Perceptual Objective: The input information which triggers psychomotor behavior.

Teaching Style: The integration of the cognitive, affective, conative and psychomotor skills and talents, an instructor uses to facilitate learning in students.

Vimcet Series: A filmstrip - tape program for catalyzing in-service staff development.

Assumptions:

I. The training and education of health care personnel should be substantially expanded for the immediate future to supply manpower for medical science.

II. New middle level professionals and health technologists are emerging in response to changing modes of health care. This responsibility falls within the domain of the community college. Frequently health technology instructors are more knowledgeable in the clinical aspects of the health technology than in learning theory and educational technology.

III. Faculty competencies need to be specified and faculty performance must be evaluated if health education is to respond adequately to changing modes of health care.

Limitations:

I. This study is placed in the department of a particular health technology in a community college.

II. The data will be collected from August through December 31, 1974 and subsequently evaluated for applicability to other health technologies.

Statement of the Hypotheses

The following hypotheses were formulated:

I. If by means of a functional systems approach, faculty competencies are defined and role expectancies delineated, then measuring faculty performance will become criterion referenced and increase faculty self-actualization.

Rationale: The role of teacher must be distinguished from the role of the professional health technologist. The role of the teacher is to serve as a facilitator of learning and as an instrument of communication. The teacher socializes the student into his professional role and the health professional invites the student to share his enthusiasm for the subject matter of the health technology. This dual responsibility requires that roles expectancies and faculty competencies must be brought into a visible functional system which provides its own meter.

II. If faculty participate in defining instructional competencies through in-service-training they will be committed to a creative concept of quality and efficiency in teaching.

Rationale: Administrators and faculties require opportunities for experiences that lead to the development of resources and avenues for teacher involvement in decision making and curriculum planning. This approach is appropriate if together faculty and administration use these understandings as a process of seeing relationships to improve teaching skills through in-service-training, self-study and interaction.

III. If faculty are recognized as problem solvers and their creative powers challenged, then increased self-assessment will result in continuous non-punitive evaluations as a means of causing change in students.

Rationale: A faculty should confirm and periodically reconfirm, its commitment to provide excellent quality instruction to students in health technologies. Assessing the quality of instruction should be a professional responsibility of instructors. A process of examining criteria by which performance may be measured appropriately is based on learning theory and focuses attention on instructional practices. Assuming that faculty have been selected for subject matter expertise in the health disicpline, the appropriate areas for assessing meritorious instruction are the instructor's ability to get behavior change, communicate effectively, recognize learning problems, plan curriculum, specify goals, define learning performance objectives, and diagnose what is relevant to the health technology's requirements.

IV. If a competency based evaluation points to the quality of instruction in medical laboratory science, the consequence of this approach will be understandings which are both relationships within the department and measuring tools.

Rationale: In an humanistic concept of instruction and evaluation, the evaluation system must be part of a problem solving system which uses information about the cognitive styles, the personal dimensions, and the individual differences among instructors and their audience to augment strengths and improve learning. Professional people grow when they practice their profession. A professional teacher practices his profession when he uses his knowledge to identify his strengths and weaknesses, to examine his students on more than one dimension, to diagnose their needs as these relate to their educational aspirations, and to select actions which are relevant to the limitations and aptitudes of the instructor - student relationship.

Chapter 2

REVIEW OF THE LITERATURE

INTRODUCTION

Characteristics of Effective Teachers

The approach to the investigation of the relationship between instructional competencies and an in-service training program, which emphasizes the cognitive styles of learners and the learning and teaching styles of instructors, represented a departure from traditional intent. Therefore, the traditional means of defining expert instructors were examined and following this, a rationale was developed for the categorization of faculty competencies among several dimensions that formed the nucleus of this study.

Essentially, in practice, curriculum instruction and evaluation form the continuum students experience. Recent practice in pedagogy progresses toward measurement of instruction through monitoring behavioral change in students. If educators are to change their past orientation from valuing methods to noting the effects of methods, then they must identify the instructional competencies which yield the desired results.

Abraham Flexner in his report on medical education defined a profession as, basically intellectual, practical, organized, and alturistic.[4]

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[4] Abraham Flexner, Address to the AMA Council on Medical Education, c1973.

Obviously the profession of education is basically intellectual in nature, usually alturistic but frequently is neither practical nor organized. This is reflected in the disparate descriptions of the teacher's primary role.

In an interesting study of the relationships between teachers' attitudes and teachers' behavior, Mitchell confirmed previous studies which indicate that individuals respond differently to the same training. She suggested that some individuals are more trainable. In referring to Andrew's study (1970) of the use of operant techniques by instructors, Mitchell noted that positive attitudes towards their training influenced instructors acceptance of new ideas.

From her subsequent research Mitchell concluded that "the best predictor of a single act of behavior is its corresponding behavioral intention." [5] In light of her conclusion, the delineation of teacher's competencies should include evidence of the instructor's inclination to teach expertly.

Brent's practical analysis of competency - based teacher education related a list of teacher competencies to a modular concept and to evaluation. His premise was that if desired learning failed to occur then the teaching was questionable. He emphasized, "competencies are stated in behavioral terms' Module Clusters (in time) bring most students up to stated levels. Assessment includes product criteria." [6]

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[5] Marlene Mitchell, "Teacher Attitudes vs. Teachers Behavior:" Final Report, ED063280, p. 1, May, 1972.

[6] George Brent, "Competency Based Teacher Education, A Practical Analysis,"ERIC, 1972, ED093868, p. 13.

Brent partioned teaching abilities into instructional skill; application of learning theory to strategy, choice of materials and programs; and the development of a positive school environment. For all of its objectivity and sensitivity to assessment the means by which the investigation chose competencies lacked the empirical guidance which an assessment of the cognitive styles of the individuals offers.

Under an innovative program Halinski and Tcheng engaged twenty per cent of a university faculty in activities designed to improve the quality of instruction. Their results provide some useful insights for the value of assessing cognitive styles. The mere proliferation of programmed packages, videotaped lectures and self-instructional audiovisuals does not indicate these materials will be accepted by students or used appropriately by teachers. Because the nature and quality of learning which students experience varies widely, the authors recommended that educational technology should be carefully planned.

They conclude, "It seems clear that any movement in the direction of instructional technology should be carefully planned and coordinated, adequately funded and fully evaluated. What may appear to be obvious is too often lacking in practice." [7]

Halinski and Tcheng selected eight activity scales related to broad educational activities and sampled students' behavior to determine their level of involvement in the project's activities. The activity scales may be found in the Omnibus Personality Inventory. In this case, following the participants' cooperation in the project, no significant change occurred in the undergraduates' participation in the college academic life; however, more favorable theoretical orientation was noted by many students.

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[7] Ronald S. Halinski and Tse-Kia Tcheng, "Systematic Student Input Into Evaluation of an Educational Innovative Program," ED0930933, Apr., 1974, p.5.

The most apparent question, which the many different interests represented in an educational endeavor, ask is, "do we have the means to assess educational outcomes?" Although the Statistical Summary published by the National Center for Educational Statistics (1973) contains fifty eight educational indicators, the difficult problem, still unsolved, which this study addressed was to discover the link between outcome and causal factor; and still more difficult to select appropriate criterion measures.

In a penetrating look at the principles of criteria selection, Cooley suggested that the most important criterion for evaluating educational programs is the student's general educational development. Through the use of two different batteries of cognitive tests given to a sample population, he concluded that the skills an individual is able to learn today are mainly a function of his past learnings. Cooley states that although half the variance in general educational development may be attributable to prior educational development, half of the previously unexplained variance may be attributable to different educational practices. Cooley reasoned that, "one principle of evaluative research that has become extremely clear in recent years is that the educational processes being assessed cannot be expected to be implemented uniformly across students, classrooms, schools etc." [8]

Although community colleges must serve a widely divergent student population, their faculty have made relatively little progress in describing competent teaching or the characteristics and competencies of effective college teachers for specific situations and disciplines. Even less is known about the qualities which make faculty effective in teaching the various health technologies.

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[8] William W. Cooley, "Assessment of Educational Effects: An Educational Psychologist's Point of View," ED093929, Apr., c1974, University of Pittsburgh.

In designing an effective health technology program, specifically denistry, Taft and Logan designed a method to review the status of a program objectively. They selected the identification of student performance capabilities as the most obvious need and designed a specific strategy to detect either specific student deficiences or progress. Their emphasis on evaluational data, detailed for diagnostic interpretation and adaptive curriculum changes, is a progressive, essential step in health technology education. The authors expressed a concern, "---with the evaluation which takes place as part of the learning process---."[9]

In most health technology programs, the final assessment requires that the program graduate pass licensure and certification examinations. Taft and Logan presented in a concise format many of the measures needed to ensure the above happening. The essential question of ensuring the competencies of their graduates which health technology programs must answer requires the identification of the competencies of the faculty given the responsibility for student learning.

What effect does the personality and attitude of an instructor have on the students in his classroom?

Is the teacher responsible for teaching and learning?

What professional insights and self knowledge should the health technology instructor in a community college seek?

Can health technology instructors maintain allegiance to two disciplines?

The Teachers National Task Force of the Improvement and Reform of American Education urged that teachers have a deciding voice in their own destinies. They recommend that teachers, through legislation, must have role in determining the meaning and measurability of competencies. Their report stated that, "Maintaining competence will involve the individual teacher, the teaching staff as an entity, ---" [10]

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[9] Thomas B. Taft, Jr. and Nelson S. Logan, Systematic Evaluation Strategies for Innovative Programs in Health Professions Education: Need, Function and Components, ED093920, University of Iowa, April, 1974, p. 6.

The Task Force viewpoint espoused a continous process, cyclic in nature; the identification of needs; and specification of program goals, objectives and evaluation procedures. It was logical to assume that this required a creative responsiveness from teachers in all their instructional duties as they interact with students and plan for learning experiences.

Teacher Effectiveness - Humanitarian Approach

Disagreement and ambiguity with respect to designing teacher competencies can be lessened if educators establish criteria of teaching effectiveness which take into account behavioral dimensions and observable behavior. The crucial step in this process will require the specification of observable behaviors based upon the situational factors in the community college and, equally important, the personal dimensions and characteristics of individual teachers.

A personalized approach to conceptualize instructor - student relationships stemmed from the basic assumption that teacher behavior is a function of the participants' interaction. Ryan, in an exhaustive study, postulated that these relationships can be stated objectively as behaviors and revealed through overt behaviors and indicators or correlates of behavior. [11]

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[10] Inside Out: The Final Report and Recommendations of the Teachers National Task Force on the Improvement and Reform of American Education, ED093863, May, 1975, p. 5.

[11] David Ryan, Characteristics of Good Teachers, American Council on Education, c1970, p. 27.

On the practical side it may be expensive in time and effort and perhaps impractical to set up systematically controlled educational programs designed to develop an individualized learning climate, nevertheless there are some relatively simple means whereby teachers may obtain meaningful information. Several studies supported the premise that student feedback can provide a mirror of teaching activities which teachers can use to learn more about themselves and their classroom activities. In an experimental study, N. I. Gage and colleagues reported that when students described their actual teacher versus their ideal, the teacher modified his behavior to be more in conformity with the ideal.[12]

Lee and Young theorized that the almost universal educational dependence upon verbal communication as the chief means of learning may be impossible and/or damaging to many persons. Their assumption that the ways in which people seek for meaning vary widely was investigated by the Scottsdale Public School District. This study classified an individual as either an auditory or a visual person.[13]

It is important that one recognizes that a person's description of a competent instructor must necessarily reflect the bias of the criterion he uses as well as his particular acculturation. Moreover, pupils vary widely: a bright academically minded, independent, well-adjusted and highly motivated student may value most the teacher who, like himself, is rigorously academic and perhaps impersonal. Other students may prize succor, personal warmth and friendliness. What measuring instrument, then, may one employ to describe adequate instruction? Because education is a complex process a multi-dimensional means for measuring education appeared necessary.

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[12] N.I. Gage, Runkel and Chatterjee, Equilibrium Theory and Behavior Change, An Experiment in Feedback from Pupils to Teachers, Urbana, Bureau of Educational Research, University of Illinois.

[13] Lee G. and Young V. Auditory Versus Visual: A Dual Modality Theory, Kappa Delta Pi Journal, January, 1975.

Educational Sciences

Although the term Educational Sciences per se is new to the educational arena, the concept is not new to the experential instructor. The clinical question he asks is, "What does an individual do in order to comprehend and find meaning in his environment?"

Instructors, students, and supervisors differentiate, construct, and retain underlying relationships abstracted from visual, verbal, auditory, olfactory and tactile stimuli. The means by which an individual derives meaning is not one of passive integration, but an active process in which an individual maps new experiences onto existing structures.

Jean Piaget's notion of linking comprehension with the subject's ability to integrate new information onto existing constructs is demonstrated time and again as instructors work with students. Individuals, who have viewed the same film strip and heard the accompanying tape, report different insights and various understandings. From the same instructional technology and presentations students' achievement reflects a wide range of comprehension.

Bruner's investigations accepted Ulric Neisser's premise that not all persons equally accommodate society's demands and consequently individuals experience discontinuities in cognitive function, which accompany their acculturation and accommodation into adulthood. If one is to determine the cognitive style of individuals, then he must answer certain basic questions about how individuals handle information. Essentially, what schemata enable the individual to deal adequately with reality?

According to Bruner, accommodation comes about in three fundamentally different processes.[14]

Absorption is the first mode of accommodation. Absorption in the cognitive schema means that the first perceived inharmonious jumble develops into a harmonious schema which has swallowed the elements and interrelations. For example, having learned a poem by heart, it is the poem one remembers not his learning strategy.

Displacement is the second mode of accommodation. In displacement although two cognitive schema exist simultaneously, the new schema assimilates the same environmental event differently from the old. Sustained instances of displacement are common among professionals, who are able to react to a social situation either socially or professionally.

Integration is the third mode of accommodation as Bruner defines it, "Integration requires a step to another level of abstracting or understanding in which outputs of older modes of processing are part of a more comprehensive concept or insight."[15]

The transactional relationships between all the persons in instructional environments synthesize the learning which happens. Teacher training too often ignores the classroom instructional situation. Clark postulated that, "The first concept to relating theory to practicing acts is to know that the purpose of theory is to explain a state of affairs and the objective of explanation is understanding."[16] This study clearly differentiated between teaching and talking. Clark suggested that a theory, which represent the state of mind which teachers ought to possess before practicing their profession, is needed. Eble proposed that a variety of moods even uncommon ones are appropriate to relieve the prevailing classroom mood of honest effort. [17]

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[14] Bruner, Oliver, Greenwald, (et-al) Studies in Cognitive Growth, John Wiley and Sons, c1967, pp. 64-68.

[15] Ibid., p. 66.

[16] Earl D. Clark, Teacher Acts Part One - The Syntactual Concept, c1970, ED093869, p.8.

The Teacher's Cognitive and Teaching Style

Knowledge of his cognitive style indicates to the teacher, and to others, how he derives meaning from the environment. More importantly the instructor who knows his own cognitive style can instruct more assuredly and relate to students rationally. Radike states, "Research has shown that students rated teachers higher in effectiveness when their cognitive styles were similar to the teachers." [18]

Conversely students who differed from their teachers in cognitive style tended to get lower grades than students who had cognitive styles similar to their instructors. Knowing that his cognitive style may differ from many of the students he teaches will motivate the individual interested in teaching, not talking, to try different strategies and means to achieve the same ends with different students.

Teaching styles may vary among individuals with similar cognitive styles. The classroom instructional situation is related directly to the ways in which a teacher assigns priorities to the various actualities of teaching. The concerns an instructor holds for process, content, students, and for property will show in the classroom instructional situation. Personal dimensions will become evident in the teacher's ability to accommodate student needs and finally the instructor's own cognitive style will dictate his use of theoretical, visual, auditory, qualitative and quantitative symbols.

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[17] Kenneth E. Eble, Professors as Teachers, 1972, Jossey-Bass, Inc. Publisher, p. 45.

[18] Floyd W. Radike, East Lansing, Michigan Handbook for Teacher Improvement Utilizing the Educational Sciences, OCC Press, 1973.

Hill stressed that teaching styles are tools to use advantageously to benefit students.[19]

Faculty Evaluation

The tower of Babel cannot rival the many voices advocating either a particular measuring scheme or tool for assessing faculty performance. Although these voices vary in sophistication and praticality - few institutions have heeded Miller's suggestion to develop long range and short range objectives for their programs and to delegate the responsibility for appraising their effectiveness to the department chairman.[20]

Richard Miller succinctly observed, "Today, faculty evaluation remains one of the most complex aspects of the academic world. Fiscal pressures on public and private colleges alike are forcing them to find ways of determining effectiveness and efficiency - which means evaluations."[21]

Indeed, in the community college in which this study is placed, as in many others, the evaluative scheme or measuring instrument varied yearly. The need for a comprehensive, goal and student oriented approach which held the possibility of improving academic performance through faculty evaluation remained a sensitive issue hanging between administrators and faculty.

Obviously, the newly popular concept of accountability involved evaluation of faculty performance and student achievement. And notwithstanding the enormous influence and responsibility of the education profession, many federal, state, and local agencies are also questioning the purposes of education and the machinery of the system which delivers educational services. Educators are asked to provide accountability programs of integrity and merit.

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[19] Ibid., p. 75.

[20] Richard I. Miller, Evaluating Faculty Performance, Jossey-Bass, c1970, p. 13.

[21] Ibid.

Evaluation must play a decisive role in any educational accountability system, which must not seek scapegoats to explain its failures, but design a process which affirms the educator and student in their mutual endeavors.

Turnbull states "... the gulf between the expressions of educational ideals and many practical measures of their realization is so wide and deep that few if any working educators have been able to find their way across it." [22]

If appraisal of teaching does not result in improvement of teaching, faculty evaluative schemes degenerate into the performance of a categorical formality, the use of a devise whereby promotions are made - an indefensible procedure which satifies none of the participants.

The general impression method of evaluating faculty performance is based on judgements unrelated to specific criteria. The analytical method attempts to analyze the teachers' superiority or inferiority on the basis of instructional skills, scholarship, academic contribution, cooperation, loyalty, personality, voice, manner, and any other nebulous qualities a particular administrator may consider important. Few schemes ask for the teacher's participation, consequently, rarely gain their endorsement, contribute to their security, and/or emphasize their professional improvement.

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[22] William W. Turnbull, Proceedings of the Conference on Educational Accountability, Chicago, Illinois, June, 1971. Educational Testing Service.

The objectives which the teacher endorses must be stated in a manner which teaches students to develop rational thought and provides explicit guidance for the learner as he proceeds in directed study. Only then will administrator, instructors and students be in a position to evaluate systematically whether the learning objectives are achieved. In this way attention focuses on process and participation.

While not denying the genuine need and importance of content, content coverage goals alone neither help the student become educated nor bridge the cultural and educational gaps between administrators, instructors and students. Meaningful and valuable objectives, stated specifically, provide their own meter whereby changes in student behavior may be observed and measured. The critical question is, "what evidence demonstrates the objective has been achieved?"

When students, instructors, and administrators know the behavior and/or product desired then it is possible to select learning activities precisely. Educational technology can be put to humanitarian use, instructors can learn the teaching skills they need, students can learn the skills they require, and an informed administrator can truly supervise teaching and learning. In this atmosphere of clearly perceived needs and mutual interdependence the process and system will require continual interaction of the participants. Evaluation will be linked to performance in a visible decision making process which evaluates all participants, the students, faculty and administration.

The Role of the Administrator in Developing Evaluative Strategies

One of the more important, in fact a major purpose of supervision is to improve instruction through interaction and educational planning.

Esposito and Comfort maintain that curriculum development is the most efficacious task which supervisors should perform to foster positive instructional improvements. They state, "The degree to which the supervisor is cognizant of these areas .of understandings and skills will determine the degree to which there is potential for his success in curriculum development activities with teachers. If supervisors are to assume the role of change agent with respect to the instructional program they must perform the task of developing curriculum more frequently than they do at present." [23]

To analyze his own teaching and to work intensively on specific teaching strategies requires the enthusiatic commitment of instructors. The administrator who wins this commitment from his faculty will find it important to establish avenues of communication and self-involvement through which instructional intents can become known.

Moore stresses that the effectiveness of an evaluation program depends on the attitudes and the skills of the instructional supervisors. At Seattle Community College, evaluation begins with its president. [24] Perhaps, because Boards of Trustees wield influence and power the evaluative mechanism profitably might begin there - all facets of the college need an avenue to identify problems through a viable program which begins with defining the competencies of its participants.

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[23] James P. Esposito and Ronald Comfort, "Supervision Fostering Instructional Change through Curriculum Development," Education, Vol. 94, Nov./Dec., 1973, #2.

[24] William Moore, Jr., Blind Man on a Freeway, Jossey-Bass, Inc. Publishers, Chapter 5.

Eble confirms that an institution needs to clarify its expectation of faculty and programs at all levels and this clarification must be specific and consistent with the institutional goals. [25]

Given in-service training as a cooperative venture in which directors and instructors participate, the operational level of their curriculum skills and knowledge will increase. And furthermore if by working together, supervisors and teachers develop evaluative strategies that are useful and logical for the instructors, this will give substantive information to identify alternate appraoches to the resolution of problem in curriculum development and viable means to evaluate its subsequent implementation.

In The Saber Tooth Curriculum, Benjamin Harold states, "In education shouldn't we have something definite in mind, have a particular goal which will modify the behavior of our people so that they can arrange some system of hunting and fishing that will keep them better from starvation." In a very real sense the administrator of a health technology program who fails to do something definite in precisely defining goals risks the ability of his graduates to perform in the market place. [26]

Development of an instructional appraisal and improvement plan is fundamental to health technologies. Because these graduates may expect to deal with matters affecting the life and death of other human beings, instruction in health technologies is of vital concern to ever widening numbers of individuals. When instructors design and use procedures which define teacher's competencies they have taken the first step in improving instruction.

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[25] Kenneth E. Eble, Professors as Teachers, 1972, Jossey-Bass, Inc. Publishers, p. 45.

[26] Benjamin Harold, The Saber Tooth Curriculum, Jabner Peddinell, c1939, McGraw-Hill, p. 109.

To be effective in producing the desired behavior necessary for students to perform successfully in a clinical situation, an administrator must gather information about the students who enter the health technology program. This is the only means by which he knows what students require, what gaps, if any are considered needs. What deficiencies and strengths will hinder or help the learner? Indeed this is a requirement for the self study in an accreditation process. [27]

Two types of data require the administrators attention: A spectrum of the personal dimensions and scholastic aptitude of the students and a spectrum of these same qualities in his staff and himself, as these qualities relate to the assigned responsibilities of the staff.

Perhaps educators are fuzzy about the ends and means of educational programs because they have formulated educational goals in sweeping generalities and philosophical ideals. Too frequently their goals fail to be relevant for assessing the merit of the instruction which the students and faculty experience.

What value then does faculty evaluation have?

Edythe J. Gaines cited the design for New York City and speaks of the ... "collective responsibility of the staff for knowing as much as it can about the pupils, and of collective responsibility of the staff to use this knowledge, as best it can, to maximize the development of pupils toward defined and agreed upon pupil performance objectives." [28]

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[27] H. Adele Spence, Accreditation Programs in Clinical Laboratory Science, Symposium, American Journal Medical Technology Vol. 41, #2, 2/75.

[28] Edythe J. Gaines, The Future of Accountability, Educational Testing.

This statement changed the focus of faculty evaluation from faculty assessment to an institutional commitment and a process of participation which accepts responsibility as part of the educational enterprise. A process based assessment is reminiscent of Dewey's continuum of means and ends, according to which an educational activity must be evaluated both as a means toward some further goal and as a goal-in-itself that has been effected by a prior sequence of means.[29]

In their book for community college instructors, Cohen and Brawer offered many stimulating possibilities emphasizing the professional responsibilities of [illegible]. The major theme of "Confronting Identity" asked teachers to [illegible]eir personal and professional purposes. The message read that instructors who are aware of self translate this awareness into a dynamic awareness of students and their needs. Cohen and Brawer pointed out that "The many quantitative studies that attempt to measure and predict teaching success and the various testimonies reporting classroom observations suggests that the teacher's personality is an important influence on the behavior of his students. Although it has not been specifically stated that teacher personality has an appreciable effect on achievement, there are strong indications that it markedly influences pupil adjustment."[30]

The only useable approach to the study of the associative mechanisms of instruction and learning is an indirect one which puts the emphasis on self-knowledge, analysis and application of this knowledge in the classroom.

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[29] Ibid., pp. J9.

[30] Arthur Cohen and Florence B. Brawer, "Confronting Identity", Prentice-Hall, c1972, p. 29.

Because this study focused essentially on interaction, the effect of students on instructors must also be taken into account. Cohen and Brawer suggest that students affect an instructor and may cause him to become something other than he was when the relationship began. In this atmosphere of reverberating effects students play a major role in their own teaching. When Moore, for example, explained the interaction between community college instructors and "low ability" students; he noted that instructional resentment was detrimental to students.[31]

Activisits and/or unmotivated students can result in the personal withdrawal of instructors. According to Ryan the phenomenon of personal withdrawal results when instructors perceive students as either an unidentified mass or as a challenge to authority.[32]

The concepts of creativity, flexibility, permissiveness, and authoritarianism become the action students feel. The flexible teacher can be trained to shift directions as indicated by the classroom situation.

Clark postulated that specifics are less important than meanings which, although placed in a structured situation, the classroom, must relate to a contextual whole. This concept of the classroom instructional situation, as it may apply to building a theory of instruction, implied the importance of human relationships.[33]

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[31] William Moore, Jr., Against the Odds, San Francisco, Jossey-Bass, c1970.

[32] Kevin Ryan, Don't Smile until Christmas: Accounts of the First Year of Teaching, Chicago, University of Chicago Press, c1970, p. 109.

[33] Earl D. Clark, Teacher: Acts: Part One - The Syntactical Context, c1970, ED093869.

Wendell suggested that reflective teaching is relative because man, psychologically, is relative and perceived discrepancies create some cognitive perplexities. These in turn will encourage teachers to communicate with students to facilitate learning. [34] In health technology instruction this basic communication has implications for the students' success later in the clinical situation. He must have this practice in discovering another's feelings and interests to transfer to his new classroom in the real world of work.

Timing and pace are part of the classroom dynamics and must be developed through experience.

Olds dispelled the myth that teacher education programs turn out finished educators, both teachers and administrators, guaranteed to perform their teaching-related assigned duties well. As the recent literature implied, formal university training only introduces the novice to educational work; real professional expertise comes through self examination, study, and performance evaluation. [35]

Some Implication of Related Research on the Study

Educators require some theoretical position as the basis upon which they develop an educational program. The theory may be implicit in the program's development or may be stated explicitly. In a sense educational research requires the testing of an hypothesis based on that theory and subsequent evaluation of the test finding. Thus if hypotheses are to be confirmed or verified they must be subject to evaluation.

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[34] Robert Wendell, the Teacher's Dilemma with the Open Classroom, Education, Vol. 94, Nov.,/Dec., 1973, #2.

[35] Robert Olds, Performance Evaluation Rates a close Look, Compact, May/June, 1974.

In behavioral sciences evaluation is viewed as a mechanism whereby hypotheses are formulated and tested. The educational sciences, per se, are newcomers to the behavioral sciences. And although obviously the hypothetic - deductive method operates most clearly in the natural and applied sciences, it is equally appropriate in behavioral sciences. Ipsative measures or scores are encountered infrequently in natural sciences. An ipsative score describes a level on one characteristic relative to another or other variables and is the score most frequently appearing in educational sciences research.

The scores obtained through Cognitive Mapping and Persoanlity Inventories have different meanings and distinctive rationales. The matrix of intercorrelations among the scores obtained from one Ipsative measure has no inverse, therefore standard methods for computing multiple correlations are not appropriate for Ipsative measures.

In research designs which focus on individual students, ipsative scores identify strengths and weaknesses and force the instructor to question who he is and how he fits or misfits an educational program's scheme.

Within the teaching profession, advocates of competency - based education have sought to classify teachers' skills on teachers' behaviors. The important and unanswered question in health technology education is how does one assist an inner directed clinical professional to know himself not only as a health technologist but as an instructor? This question is crucial to community colleges with programs in health technologies.

The references cited in the review of the literature appear to substantiate the hypothesis that an analysis of the personal dimension which an individual brings to the educational scene adds valuable insights, which are useful in defining instructional competencies.

When an instructor feels responsible for the competencies his profession demands, acknowledges them overtly, accepts students as human beings and commits himself to developing student potential more fully, he has taken the long stride toward personal and public accountability.

The precise definition of goals and delineation of directions need not imply inflexibility. Instead in this framework, change, innovation and experimentation serve the best interests of students and faculty. This has been noted in the individualized prescriptions for learning employed successfully at Oakland Community College.[36] Teaching needs a new approach that engages all individuals more actively in the learning process and focuses on the thrust each individual adds to the dynamics of the interaction occurring in the learning environment.

Summary

The literature supports the premise that a systematic approach to identify instructional competencies can be functional and humanistic. The many variables among students, instructors and administrators have a direct influence on the objectives of an educational program. Particularly this was noted by Ashbrook.[37]

Clearly one requires knowledge about learners and their instructors, particularly if the state of an individual learner's motives and abilities is the strongest predictor of his achievement. In the real world of text books, calendars and terms, classroom teachers and students constantly engage in a term's length longitudinal study for the assessment of educational effects. This results in a grade for the student, which frequently measures not the student's learning but his and, perhaps, his instructor's frustration. This, the inseparable heart of the Siamese twins, instruction and evaluation, is the reason why a multi-dimensional definition of instructional competencies is needed urgently.

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[36] Joseph E. Hill, The Educational Sciences, Oakland Community College Press, February, 1971, Detroit, Mich.

[37] Beulah N. Ashbrook, A Theoretical Approach to Self-study, p. 65-71. American Journal Medical Technology, Vol. 41.

An evaluation system, explicity designed to assess faculty performance, will be a highly complex system which takes into account the nature of the faculty, the nature of the students, and the learning climate. This concept of measurement or evaluation inevitably leads to the measurement of the aspects which can be quantified and measured.

The review of the literature revealed that the direction in which defining instructional competencies tended was toward the social contexts in which individuals live, work, and change. Research and development have moved the fields of instruction and evaluation much closer to an informative process which is sensitive not only to the human needs of the academic community, but also fulfills accountability requirements.

Despite the diversity of innovations and range of ideas reviewed here in the definition and evaluation of instructional competencies, a common theme stands out - the belief that teachers need to be managers of their own destinies and use their freedom and skills in sharing knowledge and rational emotion.

Chapter 3

DESCRIPTION OF THE STUDY

Rationale

The Procedural Design was pluralistic. By that is meant that in order to explore some of the functional relationships in teaching and learning, it was necessary to accept varying provisional interpretations. The study generated a theory that is an eclectic synthesis of three learning theories: borrowed from Functionists, Humanists, and Cognitive - Field Theorists.

In the context of this study functionalistic interpretations assumed that man continually derives new meanings from his environment and personal experiences in many ways. Humanistics interpretations emphasized the strengths that an individual uses in deriving meaning from his environment. Humanism required that instructors participated in defining their own accountability in order that they would become managers of learning and not be managed by instructional technology. Cognitive field theory related to the assumption that man's insightful discoveries provide the map he follows to new learnings and orientations.

The underlying thesis was that personalization of instruction and learning improves learning and can be modified by changed modes of defining faculty competencies. In such a schema each teacher learned what he could do best and what his students could do best. Accordingly, in the context of this research, the means by which individual talents were used to shape classroom instruction required instructors to participate in in-service training.

The qualities desired in a criterion measure. According to Thorndike and Hagen the four qualities of importance in a criterion measure are relevance, freedom from bias, reliability and availability.[38] In evaluating instructional aspects of a health technology program all criterion measures are only partial in that they measure the preliminaries to the graduate's actual performance on the job. The ultimate criterion is the worker's continuing success in his choosen work. Because this ultimate criterion is immediately inaccessible, an administrator must seek criterion measures which will represent performance objectives appropriate to the ultimate criterion of success in the clinical setting.

The study hypothesized that an assessment of the way in which an individual seeks meaning directs his educational experiences and transfers to his success or the job. Although, currently, empirical evidence on cognitive accommodations is beginning to accumulate, the degree to which this partial criterion measure is relevant was explored further. The instruments used in this study follow:

The California Achievement Test. The California Achievement Test provides a word knowledge score, comprehension score, and total reading score, mathematical concepts score, computation score, and total mathematic score. It is a measure which yields fundamentally stable data and has national norms. The California Achievement Test (CAT) was chosen for the insight it gives into the students' basic working tools of academic endeavors.

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[38] Thorndike & Hagen, Measurement and Evaluation in Psychology and Education, John Wiley & Sons, Sixth Printing, May 1966, p. 167.

Cognitive mapping. As an individual grows he experience the uniqueness of events, objects, and the persons he encounters. With growth comes an increasing sophistication, which is less spontaneous and self-centered. The college age student is exchanging his spontaneous outlook for an increased ability to use, exchange and catalogue information. Cognitive mapping exposes the means an individual uses to formulate, reason, and code the numerous pieces of information he perceives. Two of the advantages which one may expect from cognitive mapping are:

(1) that learning activities which take advantage of the ways in which individuals have accommodated and integrated knowledge in the past will facilitate future learning,

(2) that prescriptions for learning may be written which will help individuals enhance and expand their present cognitive styles.

Through the means of Cognitive Mapping, students and health technology instructors acquired insights into their coping mechanisms. When instructors and students maximized their individual potential through self-discovery then the student's cognitive style could be used to strengthen his performance.

The conceptual framework which served as a basis for the cognitive mapping process possessed no magic in itself to cause behavioral change. In using the cognitive inventory as a basis for decision making the writer held a personal interview with the participants in the study. During this interview an exploration of the meaning of the responses to the inventory provided increased opportunity for exploration and self-awareness.

The Cognitive Style Inventory. The format of the cognitive style inventory is based on the premise that individuals have an implied social contract as they differentiate and understand their choices and the consequences of these choices. Research both on a person's internal needs and his capacity for understanding his experiences as he relates to others in the academic environment has become the domain of humanistic psychology. Child expressed this concern, "We learn more about man by assuming him to be an active agent than by assuming him to be a passive victim of external forces."[39]

Approximately one hundred and sixty two statements of personal inclination and preference comprised the cognitive style inventory. A tally sheet was furnished which allowed the individual taking the inventory to indicate his response to each statement on a three point scale ranging from usually, to sometimes, to rarely.

The scope of the statements and flexibility of the tally scale allowed for the not entirely predictableness of human nature. But the inventory's theoretical orientation rested on the assumption that a person's position in seeking knowledge and his subsequent development are characterized by the general trend of his reasoning. These constructs help in characterizing the individuality of students and in understanding how student processes the information instructors give.

Although the Cognitive Style Inventory, which was administered to students and instructors, generated a variety of information, this study was confined to an investigation of the evidence associated with theoretical symbols, cultural determinants, and the modalities of inference an individual applies in seeking information and making decisions.

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[39] Irvin L. Child, Humanistic Psychology and the Research Tradition: their Several Virtues, John Wiley and Sons, c1973, p. 68.

According to Hill and Nunney the theoretical symbols give insight into theoretical visual linguistic ability, theoretical auditory linguistic ability, theoretical visual qualitative aptitude and theoretical auditory qualitative aptitude.[40] More simply the theoretical symbols reflected an individual's strengths in comprehending written words, in understanding spoken words, in an ability to hear symbolic notations and discover meaning thereby and finally, in comprehending written symbolic notations or numbers. Put more simply, the cognitive inventory classifies an individual as either auditory or visually linguistic and as either auditory or visually symbolically qualitative; in short either a visual or auditory learner, and sometimes both.

The cultural determinants represent the network of connections and the influences which bear upon an individual as he makes decisions and relates to his environment. The cultural determinants were categorized as family, associates and the individual himself. As a matter of definition, freedom of choice indicated many individuals, particularly women, vacillate between two of the three cultural determinants.

The modalities of inference which the inventory assessed were a preference for order and categorical reasoning, a pattern of reasoning in terms of contrasts and comparisons, an overview of the relationships involved through a synthesis of components, a deductive approach to logic and finally a habit of apprasial. Essentially these scales reflect the individual's mode of reasoning to reach a conclusion or make a judgment.

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[40] Joseph E. Hill and Derek N. Nunney, Personalizing Educational Programs, Oakland Community College, Bloomfields, Hills, Mich., c1974.

The Omnibus Personality Inventory. The point of departure for this study was, logically, that individuals, in an educational setting, have individual ways of thinking, adapting and mastering a particular symbolic system; and these ways have developed by virtue of an individual's past experience. Hopefully, the knowledge of his particular intellectual disposition provided an individual the basis for self understandings and gave him directions for growth.

The pressures that develop within an individual seeking admission into a health technology profession required the exploration of the source of concordance or discordance among his three modes of cognition; which are his use of symbols, images, and actions.

In applying the information which the Omnibus Personality Inventory yielded, it was noted that the System of Intellectual Dispositions placed individuals on a continuum of intellectual dispositions. Specifically the OPI gave a profile of intellectual scholarly disposition; these scales considered together are more complex than one of the scales consider singly. They are explained below:

The Thinking Introversion (TI) Scale - 43 Items: The individual who scored high on this test prefers reflective thought, academic activities, is interested in a range of ideas and in a variety of activities. The past use of the TI Scale supports the interpretation of the TI Scale as reflecting the importance and emphasis in ideas, scholarly orientation, and investigative abstract problems.

Theoretical Orientation (TO) - 33 Items: High scorers on this scale preferred academic thought, academic activities, and expressed interests in a broad range of ideas found in a variety areas. Neither the immediacy of a situation nor the popularity of an idea interested them excessively.

Estheticism (ES) - 24 Items: The person who scored high on this measure indicated diverse interest in the arts and humanities. The content of this scale extends to responsiveness to esthetic experiences.

Complexity (CO) - 32 Items: .High scores on this scale reflected a preference for experimentation, flexibility, tolerance for ambiguities, novelty, and uncertainties.

Humanizing Instructional Evalution. A humanistic approach to instruction required that instructors develop an integrated curriculum aimed at optimizing human potential in theintellectual, affective, interpersonal and conative realms. Indispensable to this goal was the development and utilization of a system for collecting, organizing, and assessing data to provide feedback for evaluation of learners, instructors, and administrators.

The higher order cognitive skill were assessed by use of a measuring instrument which yields ipsative score interpretations, or scores interpreted within the individual, comparing one of his characteristics with another.

In its assessment of the OPI, the CSE - RBS Test Evaluation Series rated the OPI, Form F., Intellectual Disposition Scales as follows:

	Validity	Examine Appropriateness	Normed Excellence	Teaching Feedback	Usability	Retest Potential
Range	0 - 15	0 - 13	0 - 10	0 - 9	0 - 8	8 - 5
Rating of OPI	11	13	5	6	8	0
	Fair	Good	Fair		Good	

The overall rating of the Intellectual Disposition Scales of the OPI is good.[41]

The developers of the OPI, Paul Hurst and George Yonge, state that little or no attention was given to the supplementary use of the OPI as a predictor of academic achievement, but, although the authors of the OPI considered the scales as measuring independently important characteristics, they nevertheless recognized that aptitude is one aspect of intellectual orientation or attitude.

A premise of this study was that information that is truly useful to aid an individual in self understanding and development must provide information about both interpersonal dimensions and cognitive inclinations.

Determination of teaching style. The teaching Style Matrix - Because of the unique requirements of instruction in a clinical setting, individual and group conferences offered an ideal way to discuss an individual's teaching style with him. In this fashion strengths were confirmed and weakness recognized as basis for improvement.

The more - traditional use of a matrix to identify components was applicable to the campus instructors and administrator. (See Appendix A)

Because of time limitations intensive research into the validity of each instrument would have become a major research problem in itself, therefore, either the evidence presented in the manuals that accompanied the tests and inventories and or the ratings of CSE - RBS were accepted as evidence of validity.

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[41] CSE - RBS Test Evaluations, Center for Study of Evaluation Graduate School of Education, University of California, 1972, p. A88.

Teaching Feedback. This category of evaluative criteria was a major concern. Essentially, the criterion for data interpretation focused on the examinee himself, in an auto feedback mechanism which included students, instructors and administrator working in groups and examining the data as a basis for individual insights. An ability to determine the entry behaviors and abilities of the learner and the instructors were the essential determiners of the qualities desired in a criterion measure which was to be used empirically. This was the common quality the writer found in the Omnibus Personality Inventory, Cognitive Inventory and the California Achievement Test and led the investigator to select these particular instruments for this study.

The Methodology

The Study Population. Twenty seven sophomore level students in the clinical phase of their studies, three camp instructors, ten clinical instructors, and a director formed the population of this pilot study. Through the use of testing and inventories using this population, basic educational research probes yielded a variety of information about the participants and this evidence was organized into a conceptual framework.

The Procedure. In order to explore the functional relationships in teaching and learning instructors used previously defined learning performance objective delineating: conditions, content, desired values and attitudes, skills and performance, and degree during the course of this investigation.

In order to explore the humanistic relationships in teaching and learning as well as the strengths an individual brings to his learning climate the following programs were begun:

I. The Testing Program

A. Students were administered:

(1) a basic aptitude test which yielded total verbal and total quantitative aptitude scores;
(2) a personality inventory;
(3) a cognitive style inventory.

B. Instructors were given:

The Teaching Style Inventory design was based on the information the writer obtained from students who were asked to write a description of qualities they noted in the best instructor they experienced in health technology classes. The inventory statements reflect the students; perceptions of good teaching.

(1) Personality inventory;
(2) cognitive style inventory;
(3) teaching style inventory based on student's assessment of teaching style.

II. The Program of Explorations

A. The administrator conferred with students in discussions which focused on the meanings which could be derived from an analysis of test results and their usefulness in the academic and clinical settings.

(1) cognitive mapping and learning preference;
(2) verbal and quantitative aptitude;
(3) intellectual disposition.

B. The administrator conferred with instructors in discussions which centered on the meanings which could be derived from an analysis of the inventories and their usefulness in the art of instruction.

III. The Program of In-service Training

A. The Vimcet Series was used weekly and covered three areas: curriculum, instruction and evaluation.

B. Using these experiences and knowledge of the cognitive styles of students and themselves instructors were encouraged to choose options and alternatives to the educational techniques which fulfilled the requirements of the health technology specified in Step I., which matched better both the classes cognitive style and the instructor's teaching style.

The Classification of Instructional Competencies. The writer defined instructional competencies based on an analysis of the data the study yielded, the insights gained through the exploratory and in-service training program and the Program Goals. (See Appendix A)

Conceptual framework based on the study. In identifying the competencies allied health instructors need to be successful, it was useful to categorize skills and behaviors among several dimensions. In order to define the competencies characteristic of teachers, the writer used a working point of view, a visible process which encompassed a spectrum of faculty activities and which could be observed systematically.

This study postulated three original major domains of instructional activity in a framework which specifies certain dimensions of professional behaviors, interpersonal behavior, and affective qualities. To avoid ambiguity and faulty communication the major domains of instructional behavior were expressed in goal statements. They were defined as follows:

Technical Goals. Technical goals defined professional behaviors on the various dimensions of professional expertise in cognitive, psychomotor and affective skills and in the techniques characteristic of practicing expert teachers.

Therapeutic Goals. Therapeutic goals utilized the cognitive styles of students and the teaching styles of instructors to place course content in a framework that relates to the student's cognitive style.

Conative Goals. Conative goals defined the actual dimensions of interpersonal skills an expert teacher employs as he functions in his assigned responsibilities. Although these goals encompassed the affective domain, the behavioral statements include evidence of inclination and resolutions.

Categories. The investigator considered the role of the teacher, as well as the expert instructional behaviors an individual displays, relates to several areas and therefore goal statements included the following categories as defined for this study:

(1) Curriculum includes the decision making processes necessary to course planning, design and content.

(2) Instruction is the process which systematically provides learners with appropriate learning and practice opportunities, which yield measurable behavior changes in learners.

(3) Evaluation encompasses a process for sumative and formative assessment and monitors public and private accountability.

(4) College service requires participation in appropriate selected college activities.

(5) Professional activities includes participation in professional societies and community service.

(6) Continuing Education is the dual responsibility to maintain currency in the health technology and educational sciences.

Identifying *technical* behaviors in health technology instructors required the writer to place the instructional behaviors necessary for planning curriculum in a sequential relationship which emphasized basic tasks.

Given in-service training in the concept of competency based educational programs the instructor will:

1. design superior courses appropriate in content and based on a needs analysis for the stated goals of the health technology;
2. state course goals which begin at the point where the axes of the discipline content and the thinking abilities of the students intersect;
3. in building program courses, analyse, classify and specify the objectives in a hierarchial framework suitable for sequential mastery of professional skills;
4. in generating course objectives, specify these variables (a) student behavior in

   (1) cognitive domain
   (2) psychomotor domain
   (3) affective domain

   (b) performance criterion; (c) condition of the learning climate and (d) degree of mastery.
5. in formulating objectives provide the panorama of course objectives in a taxonomy which allows comparisons, facilitates construction of instructional materials and is visible to students.

Identifying *therapeutic* behaviors in health technology instructors required that the instructor will provide continuity and to that purpose the instructor will:

1. accept the conviction that disadvantaged students can learn and will provide appropriate courses based on "readiness to learn" concept in an atmosphere of positive expectance;
2. accept the responsibility for turning out a good product and therefore create and maintain a humane atmosphere in which students are advised into courses which strengthen their deficiencies and augment their strengths;
3. explore the assumption that there is significant commonalty among health careers and design an integrated basic medical science course covering aspects of human anatomy and physiology, microbiology, pharmacology, electronics, and biochemistry;
4. give credit for non-traditional studies through challenge examinations, when this mechanism will enhance student progress without diluting skills and expertise;
5. admit students to the program a minimum of three times a year, through modularization of courses by providing a logical systematic process for matriculation into the program in sequential steps, which does not discriminate against culturally different people, but which includes an assessment of student aptitudes and dimensions;
6. provide a logical sequence of courses for program completion, based on clearly stated criteria for prequisities which are visible to students and emphasize student cooperation.

Identifying *conative* behaviors in health technology instructors required that the instructor who is given the responsibility for making *curriculum* decisions will use a reality oriented approach and:

1. beginning with the mission statement plan systematically to include humanization and personalization as an integral part of the educational process;
2. distinguish between educational means and ends by stressing both substance and form in the major components of the curricular model;

3. provide for differences among students in their styles of learning by providing them with various alternatives which are compatible with the instructors teaching style;
4. hold himself accountable for the extent to which students acquire the desired competencies within the limits of the students aptitudes and learning readiness;
5. support the clinical phase of the students' experience as the needs of the clinical area dictate and the student's professional development requires.

Identifying *technical* behaviors in health technology instructors who are given *instructional* assignments necessitated a meld of subject matter content and teaching expertise. In order to enhance learning the instructor will:

1. distinguish between learning conditions and charcteristic of human behavior; (42)
2. in applying behavioristic psychology and learning theory, sequence objectives in order of their complexity;
3. in establishing pre-learning behavior, design objectives which require the learner to discriminate among variables (multiples);
4. in establish learning readiness, design objectives which elicit a response from the learner (echoic behavior);
5. in establishing chain or sequence responses, design objectives which separate the tasks of a comlex performance sequentially;
6. in facilitating association practice, design objectives which use a three-step chain to stimulate the student to observe, to code his observation, and to specify the outcome of steps one and two;
7. in establishing objectives for mastery of concepts, establish associations which prompt the student to classify a variety of stimuli into a generalization applicable to other stimuli;

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[42] Miriam B. Kapfer, Behavioral Objectives in Curriculum Development Educational Technology Publications, Englewood Cliffs, New Jersey, c1971, p. 56.

8. in specifying objectives for mastery of concepts, propose a chain of events or ideas from which the student can deduce a fundamental truth, a primary or basic law and/or the essential consituent, (deductive reasoning);

9. in helping students to become problem solvers present a set of principles in a manner which requires to student to assemble these principles into a higher order principle. (inductive reasoning);

10. in assisting students to become practicing health technologists require the student to organize his information into a strategy for solving clinical problems. (example: design of a flow chart for processing a clinical specimen for bacteriological examination and identification);

11. in providing learners with relevant learning and practice opportunities, apply educational technology, which is appropriate for the objective the student is asked to master and the student's cognitive style.

Identifying *therapeutic* behaviors which health technology instructors need in order to teach enthusiastically necessitated that instructors will be given a functional laboratory classroom and develop appropriate educational technology and as a consequence the instructor will:

1. plan instruction to allow for different learning styles and speeds of the diverse student population seeking to become health technicians;

2. seek to reduce student attrition from the health technology program through a practical program of rational personal counseling; which addresses the less tangible needs of students, (life adjustive and financial difficulties);

3. recognize that health care is an imperative need and when community needs are in conflict with student needs and abilities, use a non-punitive system of grading;

4. focus on exit skills, not on admission standards;

5. cultivate a vital friendly relationship with the class as a whole by inviting the class to share the joy of learning in team activities which offer opportunities for leadership and responsible action;

6. develop a rapport with the clinical instructors in the consortium of hospitals which encourages their input into the campus activities;

7. plan instruction which uses instructional teaching styles to their best advantage and approase students of instructors' strengths;

8. consider an instructor his students most valuable resource and make this resource responsive to their academic needs;

9. function in the technologists' role in a manner which serves as a model for the student, which exemplifies professional behavior and standards.

10. listen attentively to students to insure that the message heard represents what the student means;

11. offer students information relevant to their needs and concerns.

Identifying *conative* behaviors in health technology instructors in the area of instruction the writer asked the staff not merely to think about individual differences or the spectrum of student differences but to act accordingly; therefore, given students to teach, the instructor will:

1. use pedagologic techniques which promote students to progress toward professional growth by establishing a helping not dominating atmosphere;

2. relate to students with understanding rather than condemation;

3. be self-revealing, disclose his feelings and encourage students to accept their feeling as significant but subject to change in positive ways;

4. show concern with larger events, view issues in the broad connotation of events, perceive the extensive implications of the immediate events and, more importantly share these perceptions with students for their ultimate welfare;

5. demonstrate he values his own and his students' integrity in non-permissive action and interaction;

6. tolerate some dissonance from students as their response to pressure and stress, but help to ease this dissonance by rational counseling;

7. appropriate the role of one committed to the helping process and encourage students in the process of search and discovery;

8. organize course content to emphasize concepts, generalizations and principles, but stress mastery of the skills of the health technology because these are the skills of the students which open the world of work to him;

9. view education for a health technology as a holistic task likely to involve every aspect of the health technician's tasks - subject matter, techniques, skills, ethics, human growth and cooperation, clinical structure and administration;

10. accept the premise that the instructor is the student's first visible evidence of health technology in operation and will therefore influence the student's behavior in the clinical situation;

11. plan and organize instruction and use of technology with other instructors in the department to maintain continuity of learning experiences for students.

The task of identifying *technical* behaviors in health technology instructors place evaluation in a framework which emphasized the determination of student progress in a direct relationship to instruction, therefore being committed to the principle that evaluation provides immediate feedback regarding the adequacy of the students' response to an instructional program, the instructor will:

1. establish performance standards which make explicit the instructor's expectations of student achievement;

2. distinguish between class performance individual performance objectives;

3. prepare and distinguish between special tests to evaluate readiness to undertake particular educational tasks and mastery criteria;

4. appraise specific selected learning situations to ascertain the instructional needs of students through student evaluation of instructors and subsequently act upon the expressed student needs to increase the efficiency of instruction;

5. Evaluate self as the real key to the effective analysis of the instructor's contribution to the improvement of instruction, (formative evaluation);
6. recommend curricular and instructional changes based on knowledge of the student's status and the profession's requirements gained through pertinent data;
7. evaluate innovation and changes in curriculum or instruction on the basis of their relevancy to the health technology and the students progress;
8. cooperate with the department chairman in summative evaluation of the entire range of the program.

The task of identifying *therapeutic* behaviors in health technology instructors in the area of evaluation was referenced to the philosophy of using criteria to measure teacher effectiveness, and consequently the instructor will:

1. provide a formal process whereby students may indicate to the faculty different aspects of a teacher's performance through the use of specific multiple questions designed to yield data that will assist instructors in self-evaluation and yield mutually positive effects;
2. induct new teachers into the department by communicating in tangible ways the school's policies, reward system and inservice opportunities;
3. individualize instruction through an evaluation of students' cognitive styles, personal dimensions and aptitudes;
4. monitor student progress in relation to his academic aptitudes and aspirations, counsel appropriately accordingly; recognize that no intelligence test score measures personal worth and avoid rejecting any student whose aptitude for academic pursuits is low;
5. monitor and question the directions of the students' learning experiences for their relevancy to the current state of medical art and modify practices which are outdated or have become irrelevant;

6. work within the department in colleague to colleague relationships to ensure that all students enrolled in specific courses master the same specific skills even though instructors and educational technology vary;
7. meet with students, work with them and help them develop their minds and personalities generously as time and program criteria indicate;
8. appraise the professional contribution of instruction to students using the above objectives as criteria;
9. cooperate with the department chairman (program director) in formative evaluation for improving the quality of instruction.

Identifying *conative* behaviors in health technology instructors implied accepting the professional person's ability and experience to make critical judgments or engage in evaluation. Accordingly, being committed to achieving complex objectives in the cognitive and affective domain and realizing that the mere statement of a complex objective does not mean its intent will be realized but that this objective requires motivation and far more sophisticated learning and evaluative experiences than objectives in the lower domain, the instructor will:

1. coordinate the efforts of several teachers in assessing the student's mastery of complex objectives;
2. conduct seminars in which both students and teachers are involved in an interactive manner in which significant growth and change may be positively reinforced and informally assessed;
3. encourage students to find ways of understanding and determining what objectives are central and significant to their personal development as a practicing health professional (evaluate their clinical experience);
4. explain the internalization process to the student as he attends to the clinical phenomena and climate of the health technology, responds to it, values it, and acquires a value complex which characterizes his way of life; then provide him with a measuring scale upon which he and his instructors can record his commitment to professional ethics and standards of behavior.

5. relate the student's everyday experience in the occupation to his vital motive for mastering technical skills. This is the longest step the student must take toward securing the power that comes with adequate performance.

In identifying *technical* behaviors in health technology instructors in the area of *college service* the writer stressed the freedom of an instructor to make decisions in the light of the values held by himself and in accordance with community college policy. Being forced to make choices and accepting the responsibility for participating in the internal institutional goverance system, the instructor will exercise his academic freedom to:

1. attend advisory committee meetings when requested;
2. accept college assignments outside his regularly scheduled classes willingly;
3. accept speaking engagements in the community;
4. actively recruit students through the auspices of counseling services in the college and local high schools;
5. give academic counseling, to students;
6. tutor students as time permits;
7. assist his administrator in preparing the department budget;
8. maintain at all times a functional laboratory classroom, preserve equipment and monitor instruments;
9. apply the techniques of quality control in the classroom laboratory;
10. attend career fairs and vocational education conferences.

In identifying *therapeutic* behaviors in health technology instructors the writer used a developmental approach of broad humanistic concepts to define the instructional duties appropriate to *college service*. When given the college policy handbook and acting in accordance with college and department policies, the instructor will:

1. contribute to staff meetings and use this channel to provide the program director with insights into student behavior and needs;
2. participate in professional training programs to appraise counselors and other instructors of the peculiar demands of health professions and the stress this may cause in students;
3. participate in placement and follow-up studies;
4. establish a channel of effective cooperation through interaction with the instructors in other disciplines who instruct health technology students;
5. follow college policies in interactions with students, explain the reasons to students;
6. in choosing activities, consider the instructional needs of students his first priority, but respond appropriately to college concerns and activities as time permits.

In identifying *conative* behaviors in health technology instructors the aspects of the affective and volitional behaviors related to college service the writer accepted the premise that one role of the teacher is that of a conditioner of emotional reactions; consequently to facilitate the emergence of affective and volitional skills, the instructor will:

1. express enthusiasm for the college and the community in his daily encounters with students;
2. guide students to unpredicted but meaningful conclusions as they respond to the dynamics of the changing college situation;
3. on a selective basis attend student artist series and college social events.

Identifying *technical* behaviors in health technology instructors required a gradual emergence of the educator's role in the health professional as he considered his professional activities. In response to the ever changing character of clinical experiences and given the dual role of functioning as a health technologist and an educator, the instructor will:

1. maintain currency in certification in the health technology;
2. maintain licensure according to the state law;
3. maintain a viable teacher's certificate;
4. participate in proctoring examinations for the national and state certifying societies;
5. provide in-service training for clinical instructors in the consortium of hospitals;
6. serve on state curriculum committees when appropriate.

In identifying *therapeutic* behaviors in health technology instructors in the category of professional activities the writer was challenged to devise a course of action compatible with the holistic humanistic viewpoint of teaching which this study explored, therefore, it was considered that the instructor can not pass the buck, the problem of student exposure to professional activities required that instructors will:

1. provide small group seminars which allow students to give reports from journals and discuss their meanings;
2. supervise research projects students have interest in performing and encourage students to report these appropriately;
3. attend seminars, workshops, and conventions with students;
4. review textbooks and publications for their applicability to the community college students;
5. prepare instructional materials suitable for helping community college students master the skills of the health technology.

The need in teaching for vitality and involvement required the writer to identify *conative* behaviors in health technology instructors in the area of professional activities as a responsibility to students. Within the colleges' operational structure and in accepting the responsibility for performing professionally and also in order to remain stimulating to students, the instructor will:

1. serve actively in professional societies for purpose of keeping abreast of changes in his discipline;
2. hold office in professional societies when this enhances his personal development and reflects positively on the college;
3. conduct research, prepare papers and present these before professional groups;
4. publish instructional materials suitable for use in the community college;
5. represent the college's interest in the health technology to the community as he interacts with other professionals in the community in roles other than that of a teacher.

In identifying *technical* behaviors in health technology instructors the point of departure was that communication and coordination avenues need to be kept open between the campus and the clinical areas. *Continuing education* is the proper domain of the community college. When given the responsibility for offering continuing education to the community, the instructor will:

1. open the laboratory - classroom for workshops and seminars as regularly scheduled classes permit, and participate in these;
2. sponsor commercial workshops of superior quality as time permits, and participate in these;
3. assess the needs of the clinical community and respond to these as talents and resources permit.

Identifying *therapeutic* behaviors in health technology instructors focused on improved instructor decision making for improved student learning as the goal. Therefore, teachers who enjoy the cooperation of the clinical community and value *continuing education* will accept the responsibility for helping clinical instructors understand the dynamics that determine the nature of their motivational forces and to that end the instructor will:

1. offer a program of cognitive and personality inventories to the clinical instructors;
2. share the insights gained through the instruments with the clinical faculty in personal conferences and small group discussions;
3. guide the group into an awareness of self and the uses their perceptions have in their interactions with students.

Identifying *conative* behaviors in health technology instructors in the area of continuing education the writer accepted the premise that there is no one style of teaching, no one pattern of organization, no universally accepted learning theory, and consequently the instructor will continue his own education in:

1. the psychology of learning as it applies to teaching;
2. the use of group problem solving techniques;
3. innovations and experimentation in curriculum and instruction;
4. supervisory techniques and how to apply them, through extension courses, graduate school and/or continuing education credits.

Because the knowledge of the health discipline changes rapidly, the instructor will maintain relevancy through the appropriate professional channels open to him through the community, his professional organizations, and public health agencies.

Summary

Professionalism implied responsibility. Precisely stated objectives were subject to quantitation and implied measurability of instructional intent and learner performance. Those individuals with the responsibility for instructional planning and the assessment of student learning accepted the additional responsibility for professionally influencing the lives of students to help them grow and progress in positive ways.

Perhaps the most important generalization the writer placed on the method of work was the emphasis upon feelings, attitudes, values, and inclinations which automatically surfaced in a holistic concept of behavior. As a corollary, the writer theorized that methodical thinking which relates cause with effect as the only means of proper investigation fails to account for the humanistic fallible individual who is not amenable to study by scientific methods only. The range of phenomena in the study provided the explanatory concepts and the theoretical framework the investigator utilized in defining instructional competencies.

Chapter 4

PRESENTATION AND ANALYSIS OF THE DATA

The study generated a quantity of responses on the several inventories given to students and faculty. Not all of the categories were applicable immediately to the stated hypotheses It was necessary because of the broad scope of the attributes measured to delimit the data. The quality of the relationship of the responses to a holistic, functional and humanistic approach to defining faculty competencies categorized the data selected for apprasial and presented below. In examining the information focus was placed upon the humanistic aspects of the academic community and the socialization of the student, through his participation with the faculty in a visible functional system, into his professional role.

Hypothesis One. Hypothesis one presupposed that when faculty competencies were defined in a functional systematic manner, which utilized faculty strengths to define instructional roles, the criteria for measuring faculty performance will increase faculty self actualization.

The magnitude of the responses of the instructional sample to selected items of the cognitive style and intellectual disposition inventories appears in Table I. This data delineate the cognitive realizations individuals use in comprehending written and spoken symbols, the cultural determinatnts individuals amass in making decisions, the modalities of inference individuals acquire in devising strategies, and the intellectual dispositions individuals prefer in organizing knowledge.

The mean score of twenty two, appearing in Table I, columns I and II, on both the theoretical auditory linguistic (TAL) and theoretical auditory quantitative (TAQ) indicates a strong minor power in these domains. A comparison of the standard deviations relative to these categories, however, shows a wider standard deviation among the instructors utilizing spoken words (TAL) as a source of meaning in contrast to the lower standard deviation for the scale representing a strength in accommodating spoken numbers as a source of comprehension. The Standard Deviation of nine and one tenths on the TAL scale contrasts sharply with the four and six tenths Standard Deviation on the TAQ scale. This may be explained by noting that six of the responses to the TAL scale represent a major strengths and the scores progress from four to thirty two; whereas only four of the responses to the TAQ scale revealed a major strength and these responses range from fourteen to twenty eight. In spite of this divergence, significantly, as a group, the instructors are not primarily auditory persons. Using this inventory as a reference only three of the instructors qualify as auditory persons. This represents twenty three per cent of the sample.

By contrast, the mean score of thirty and five tenths for the theoretical visual quantitative scales characterize major strengths in these domains among the instructors. Only three of the faculty lack a major power in preferring written words as a source for deriving meanings. In this mode individuals reveal strong minor scores, furthermore, although one instructor falls in the low minor range, in none is it a negligible power.

Although, generally the TVQ scale scores and its mean fall slightly lower than the TVL scores, the standard deviations vary by only five tenth.

One can only conclude that the instructors, who are themselves successful products of the traditional educational system, are readers by preference and, perhaps, inferentially by the experience, which is the result of a life time of cultural accommodations.

The cultural determinants which individuals tend to integrate in a decision-making process appear in Table I, columns V through VIII. These results were considered particularly vital in helping instructors gain insight into their teaching styles and interindividual ipseity.

The mean of twenty two and seven tenths in Table I, column V indicates reliance on the counsel of associates to be a minor attribute in this sample. Only three instructors manifest a major strength in this category. Two of these are section heads in clinical laboratories and one is part of the campus faculty, pointing again to the innerdirected health technologist, required in his professional life to make independent judgments frequently. Fortunately, in view of these scores, instruction in medical laboratory science need not depend exclusively upon group discussions.

In examining the tabulations reported in Table I, column VI it is important to note that the instructional sample was composed entirely of women. In light of this it is hardly surprising to note that family influences were a major cultural determinant. The mean score of twenty six and six tenths indicates a major in this variable. Eight of the fourteen instructors acknowledge this as a major attribute, six as a minor and none were entirely unresponsive to family influence.

Again, the inner-directedness of practicing health professionals appears in the instructional sample's reliance on self in the decisions making process. The mean score of twenty six and eight tenth in Table I, column VII indicates self is a major determinant. Significantly the standard deviation is lower than that for the family scale. Nine of the instructors fell above the mean, five had minor or weakly minor strength in this capacity.

The modalities of inference or the behavoristic mechanisms individuals favor in teaching decisions are displayed in Table I, columns VIII through XII. The mean score of twenty five for each modality is either identical or varies only slightly from twenty five. On superficial examination this indicates more similarity among the instructors' decision making style than a closer look at the data justified. Particularly, in examining the results of these columns it is important to recognize that many individuals employ more than one modality and, usually, an L (appraisal) individual may use three or more of the decisionary schemata. Coding this type of behavior requires a global summary of interlocking factors.

The pattern of responses in Table I, column VIII reveals that nine of the instructors reason from the general to the particular or are deductive (D) reasoners. In practicing laboratory scientists who have daily practice in the application of a set of principles through an admitted clinical instance to a judgment or conclusion this is hardly surprising; it is a valuable competency. Furthermore, a major D score indicates an ability to see differences, a quality inherent in deductive reasoning.

On the magnitude scale (M) in Table I, column IX, six instructors listed a consistent preference for categorizing known information and for classifying possibilities for sequentially directing actions. The mean score was twenty three and five tenths, not high enough to indicate a major strength, yet the mode was thirty, and although scores ranged from twelve to thirty two, six instructors has a major in this variable.

Interestingly the five instructors who showed no preference for the D modality also denied the M category. The commonality in the D and M scales is the requirement to analyze information for alternatives.

The instructors' responses, which apply to a preference for reasoning based on relational tendencies in grouping information, progress from thirteen to thirty eight. Responses to the R scale, Table I, column X, show the highest standard deviation, eight and eight tenth, among the inferential modalities. Seven instructors, or one half of the sample, fell above the mean and indicate a major in this domain.

The quality of using inductive reasoning is reflected in the scores in the K scale, Table I, column XI. Six instructors are inclined to differentiate information from a number of collated instances through some common concept or attribute to a general conclusion. While this quality is probably mandatory in a research scientist it is also valuable in practicing health technologists. Five of the six instructors with a major in D also list a major in K. All, also, have various dedrees of administrative responsibilities.

The L individual, who must appraise problems for possible solutions and explain phenomena in a conceptual framework is tabulated in Table I, column XIII. In assessing these results, the mean of twenty five and seven tenths must be considered in the light of an eight and seven tenths standard deviation and the wide range of scores from thirteen to forty. Eight instructors place above the mean and of these only one indicates no other inferential modality. The other instructors with an L major have capacities in three other evidencial domains. One instructor with a minor in L tended to express less need for internal consistency and valued novelty in her working relationships.

The standard scores of the intellectual disposition scales, as measured by the Omnibus Personality Inventory appear in Table I, Columns XIII through XVI.

The individuals whose personal sensory and perceptive views emerged in a preference for intuitive thought and in the use of knowledge for discovery and exploration appear in column XIII of Table I. The national mean score and the instructors' mean score match, although this quality shows the highest standard deviation, seven and five tenths, of the four intellectual disposition scales. Nine teachers place above the mean score.

A preference for the theoretical thinking which includes such problem solving traits as venturesomeness in bridging the gap between the structual and the functional are tabulated in the TO scale, Table I, column XIV. Again the mean score equals the national mean of nineteen. Eight of the sample are above or at the mean score. The scores range from seven to twenty nine. And the standard deviation of five and four tenths may possibly reflect the considerable experience these individuals have in problem solving.

Because the intellectual disposition of persons includes esthetic components and, furthermore, a humanistic approach to education assumes the relationships between instructors and students may occur on more than one dimension, the supportive interests of the sample were considered germane to the study. The mean esthetic score was twelve and seven tenths, representing a slight increase over the national mean of twelve. The scores appearing in Table I, column XV, range from one to twenty, reflecting a wider disparity in this quality than any other intellectual disposition.

Complexity, found in Table I, column XVI, in itself exhibits no generality of function; rather it is an expression of divergent thinking, alternate approaches, flexibility, and freedom from preservative rigidity. Faculty scores range from eight to twenty five; the mean score, fourteen and five tenths, is slightly lower than the national mean of fifteen. Only six instructors place above the national mean; a reflection perhaps of the fact that the practicing health technologist in his daily work-related activities can ill afford uninhibited self-expression. Complexity may be limited by the self critical scrutiny clinical activities require.

In looking at individual scores, it can be observed that five instructors were above the national mean on the four intellectual disposition scales. Three of these individuals classified as L were appraised for their decisionary process. One revealed a major in K, inductive reasoning; and the fifth held equal value in M, magnitude; d, deductive; and R, relationships.

The independent antecedent variables of linguistic or auditory preferences, the cultural determinants valued, the modalities of inference used operationally, and the measures of intellectual disposition were catalogued in a visible framework for instructional analysis. The instructional behavioral dimensions were used to aid the writer in defining the technical behaviors appropriate for health technology instructors. These appear in the description of the study and again on Forms A of Appendix B.

Additionally the independent variables were analyzed to increase the instructors' perception of the dimensions of the psychological aspects of their teaching roles.

Hypothesis Two. Hypothesis two presupposed that faculty, who participate in an in-service training program, which included an assessment of the student's cognitive styles and intellectual dispositions, will be committed to a creative concept of quality and efficiency in teaching. The premise, on which this hypothesis rests, attests that understanding increases through communication and in order to guide students effectively instructors need to know them on more than one dimension.

Results. The mean score and standard deviation for each of the modes of understanding of the educational tasks which students evinced appear in Table II. An overview of this table discloses an interesting paralled; the highest mode of learning for both the instructional pool and the student sample was the theoretical visual linguistic (TVL). The mean instructional score of thirty and five tenth indicates a major strength; the mean student score of twenty four indicates a high minor strength. The next significant observation is that all of the students' mean scores indicate minor strengths in the preferred modes of learning, in the cultural determinants which influence behavior and in the modalities of inference.

An observation of the intellectual disposition scores of students and instructors reveals a striking similarity. On the intuitive thinking scale (TI) the student mean of twenty three closely approximates the instructional mean of twenty five, however, fifteen students score above the instructional mean. An examination of the theoretical orientation scores gives students' mean score a slight edge of one point over the instructional mean of nineteen as opposed to the student score of twenty. Fourteen students score above the instructional mean in an orientation to solving problems. The esthetic scale mean scores are twelve and eight tenths and twelve and seven tenths for faculty and students respectively. Only on the complexity scale was the student mean higher, being fifteen and five tenths as opposed to the fourteen and five tenth instructional mean score. Both were very close to the national mean of fifteen.

Both instructors and students expressed appreciation for the self knowledge gained from the results obtained using the primary criteria of assessing a syndrome of intellectual interests or a potential for behaving intellectually. One of the most striking findings of the study is the closeness of the mean score of the instructors and students on the expressed intellectual cultural interests.

On examination of the cultural determinants which influence students, it is noted that only one student scored a major in associates, two in family, and three in the individual. Two of the three students with the major in the individual as the cultural determinant had major scores in family as the cultural influence.

Because only a few students had major strenghts the development of a core of therapeutic behaviors in instructors was considered essential for augmenting student attributes. If one compares grade point averages, it can be noted that only five students had lower grade point averages at the conclusion of the semester in which the study was made than they had before the term began. The class mean rose from a G.P.A. of 2.91 to 3.04. It is important to recall that these individuals are sophomore level students assigned to their first semester in the clinical laboratory and therefore, they have entered a new learning climate.

The writer considered that student number fourteen with verbal and quantitative aptitudes above the mean and a major TVL strength found socialization into his professional role difficult. Apparently student number sixteen who had major TAL, TVL and TVQ and scored close to class mean in verbal and quantitative aptitudes, nevertheless lacked the intuitive and theoretical orientation which facilitate a rational approach to problem solving. It is important to note from past experience the writer finds that first semester clinical students rarely win a grade of excellence from clinical instructors whose benchmarks are precision, accuracy, and patient care. Looking at the profile of students numbers seventeen and eighteen one sees no ready explanation for the fall in grade-point average. Perhaps here again the clinical experience placed stress upon the student. Student twenty two, with a major in TAL, confessed to missing the supportive lectures and classroom demonstration. And although he was supplied with programmed materials felt these materials were in his words, "not all that helpful."

As a result of these findings and in accord with program goals and curriculum needs, the therapeutic instructional behaviors were defined.

Hypothesis Three. Hypothesis three conjectured that if faculty are acknowledged as problem solvers they will be committed to a creative concept of quality and efficiency in teaching.

Result. For the purpose of analysis the information obtained from the Inventory, see Appendix A, which required students to rank instructors as excellent, good, satisfactory, or unsatisfactory on a number of instructional practices, is plotted in Figure I. To protect the validity of the results two precautions were taken in administering the inventory. In order to minimize end of term bias, the inventory was administered at mid-term; and furthermore, in order to remove threat of reprisal, anonymity was protected.

Figure I shows the mean scores teachers received on the ten rating scales. Students appraised an instructor according to: (1) his apparent knowledge and understanding of the discipline, (2) the visibility of performance objectives, assignments, requirements, and criteria, (3) his fairness in dealing with students, (4) his projection of the role of a health professional, (5) his degree of sympathetic understanding, (6) his ability to challenge students, (7) his enthusiasm for the health technology, (8) his organization of learning experiences, (9) his ability to teach concepts and skills which transfer to later learnings, and (10) his overall teaching effectiveness.

Student rated all instructors as knowledgeable in subject matter. Understandably, from the writer's viewpoint, the clinical instructors, who are where the action is, were rated highest in this category.

The mean score of three (good) or higher conferred on all instructors for visibility of performance objectives assignments and criteria was gratifying. The instructors considered the considerable amount of time and energy expended in developing learning performance objectives was rewarded.

An unexpected result of the study was that students rated the clinical instructors higher in fairness in dealing with students than their campus instructors. Also rather surprisingly, the students judged a campus instructor as a more ideal professional model. All instructors were viewed as sympathetic and considerate.

Evidently the student sample felt sufficiently challenged, inasmuch as the mean scores for these ratings fall between three and four tenths and three and eight tenths.

The clinical instructors earned a mean score of three and nine tenths for their enthusiasm for the professional discipline. A campus instructor rated four and another three and two tenths in this category.

No instructor was considered to be more than good in organizing learning experiences. The lowest mean score in the inventory appeared in this category, and also the lowest mean score for all instructors occurred here. The fact that the clinical instructors placed lowest in organizing learning may be a partial reflection of the exigencies inherent in instruction in a clinical situation. In health technologies, the demands of patient care require a certain flexibility in dealing with emergency and unexpected developments. Perhaps because clinical necessities must be dealt with directly, this may appear as a lack of organization when in actuality it is not. Competence in judging this wuality may require more experienced students or even program graduates. Nevertheless the important point for defining instructional competencies is that the student ratings reflect their experiences.

All instructors were rated good or better in teaching concepts for transfer learning, although clinical instructors were rated highest. Interestingly clinical instructors, who carry the responsibility for patient care and instruction too, rated four in overall teaching effectiveness. This was an unexpected confirmation of the writer's experiences that in coordinating medical technology education there is no substitute for experential learning.

Teaching styles. An instructor's teaching style was harder to determine from the results of the inventory. This was due to the varying and opposing views different students expressed for the same instructor.

Without exception all teachers were rated both flexible and authoritarian by some students. For insight into teaching style, reliance was placed upon the students written descriptions. Samples of these appear in Appendix C.

What was the effect of all this assessment upon the instructors? First, the evaluative feedback was positive reinforcement that the instructors were doing many things well. In this atmosphere of appreciation and concern for good instruction, new constructs were explored and the instructional conative goals and behaviors, described in the study, were developed.

Hypothesis four. Hypothesis four theorized that a competency based evaluation, which points to the quality of instruction in medical laboratory science, will result in understandings which are both relationships and measuring tools. Working educators who have the responsibility for the instructional process tend to be more interested in implementation than theory. During the period in which the study occurred, students were given opportunities to acquire competencies through clinical experience and provision for differences among students in their learning styles were instituted.

In gauging the outcome of this hypothesis, the criterion was an improvement in the class mean grade point average. The class mean grade point average rose from 2.91 to 3.00. A correlation scatter diagram of the students' averages is plotted in Figure II. The coefficient of correlation of (X,Y) equals 0.387, the difference between the two means is significant at the $< .05$ level (i.e. $p < .05$) with a 14.9 percent overlap.

Summary

In appraising the overall improvement in class scores it is important to be cognizant of factors which influence the study results. The first is the reluctance of clinical instructors to award "A" grades to first term clinical students and possibly the few students whose grade point averages fell slightly lower than their grade point average when the study began reflect this. The other important unmeasurable factor is the inner stress some students experience when the impact of their responsibilities for patient care become visible to them. As a class this group of students and their campus instructor frequently used a weekly seminar as a therapeutic session to help relieve the tensions created by the accountability students must accept in the clinical laboratory.

An examination of the processes and relationships accomplished during the study and an analysis of the data generated in the mechanisms of both appear to substantiate the hypothesis.

TABLES

TABLE I

SUMMARY OF INSTRUCTOR'S PERSONAL PREFERENCES

Instructors		Cognitive Style Inventory											Intellectual Disposition			
Column Instruc. No.	I TAL	II TAQ	III TVL	IV TVQ	V A	VI F	VII I	VIII D	IX M	X R	XI K	XII L	XIII TI	XIV TO	XV ES	XVI CO
01	H 30	28	28	28	18	37	30	24	30	23	20	34	19	23	14	8
02	H 26	20	29	32	24	26	34	34	32	34	36	35	13	14	10	9
03	H 32	20	34	34	32	28	32	32	30	38	36	40	38	26	16	20
04	H 21	24	35	30	28	28	32	32	30	28	28	26	20	15	1	8
05	H 14	14	36	34	22	36	32	30	30	34	38	28	28	18	18	9
06	H 16	28	24	23	21	19	17	17	12	16	16	17	22	17	11	13
07	H 13	26	26	13	22	22	28	15	17	22	16	26	20	21	13	17
08	H 16	18	22	22	26	24	16	16	19	13	33	16	27	19	14	22
09	H 5	21	18	14	16	16	18	14	15	15	17	20	16	7	9	12
10	H 29	26	33	22	22	20	22	22	19	17	17	18	25	19	12	15
11	C 32	16	38	32	20	28	30	27	25	26	20	19	29	24	15	19
12	C 28	28	35	30	19	20	34	28	22	10	23	13	25	17	11	13
13	C 18	18	28	24	30	33	23	27	19	32	19	35	31	18	14	13
14	A 17	21	40	34	18	36	28	32	30	34	32	34	39	29	20	25
Mean	22	22	30.5	26.6	22.7	26.6	26.8	25	23.5	25	25	25.7	25	19	12.7	14.5
SD	9.1	4.6	6.5	7.0	4.7	6.8	7.0	7.0	8.8	8.3	8.3	8.7	7.5	5.4	4.5	5.4
													25	19	12	15

TABLE II

MEDICAL LABORATORY SCIENCE STUDENTS

tudent No.	Cognitive Style Inventory TAL	TAQ	TVL	TVQ	A	F	I	D	L	Intellectual Disposition M	R	K	TI	TO	ES	CO	Aptitude Percentile VERBAL	QUANTATIVE	Grade Point Av. Ent. Term I GPA	Av. Term I GPA
01	14	24	19	18	16	16	18	22	20	19	19	15	17	17	12	10	88	74	3.00	3.58
02	25	24	18	8	22	23	24	14	20	10	16	11	25	20	11	21	77	52	3.00	3.00
03	14	26	22	20	22	25	28	19	22	16	26	25	31	28	19	12	91	42	2.82	3.00
04	18	24	18	16	20	14	20	18	14	15	10	25	26	17	14	16	49	37	3.00	3.00
05	16	24	30	26	21	24	22	22	22	17	23	22	14	5	7	6	44	56	2.00	2.43
06	18	24	30	26	21	16	24	25	30	17	20	23	26	28	12	17	85	90	3.00	3.00
07	16	17	26	18	20	11	18	20	24	19	11	19	12	14	18	10	88	92	3.45	3.73
08	24	24	24	11	23	24	20	22	18	20	17	18	12	16	9	7	75	70	2.53	3.25
09	20	20	20	15	20	13	25	18	24	17	17	25	33	31	19	22	52	80	3.09	3.30
10	15	18	25	20	15	22	19	25	10	17	22	21	24	20	16	22	41	73	2.72	3.00
11	18	20	20	17	22	26	20	16	20	15	15	21	17	19	12	16	64	85	2.69	3.11
12	22	26	23	19	22	24	22	24	24	25	19	23	23	22	8	10	91	80	3.00	3.00
13	28	24	26	20	16	19	17	22	22	22	12	16	24	25	11	23	63	26	2.52	3.00
14	18	21	26	16	22	20	17	22	18	10	21	19	24	20	16	18	82	78	3.61	3.50
15	22	24	26	20	22	22	20	22	22	21	19	23	26	26	18	24	94	86	3.00	3.36
16	28	20	30	30	15	25	15	20	30	25	15	11	9	15	3	7	62	67	4.00	3.00
17	20	26	26	16	17	22	22	24	18	15	17	23	15	23	14	17	86	66	3.04	2.29
18	22	26	21	16	20	18	22	22	16	15	17	21	23	18	9	8	92	94	3.82	3.29
19	16	17	28	16	20	16	16	18	25	19	15	28	19	14	10	13	67	50	2.72	3.00
20	18	18	28	18	26	22	17	18	14	15	19	18	25	22	16	18	71	50	2.64	2.87
21	20	18	23	20	22	18	28	26	26	21	19	23	34	15	16	15	92	62	2.97	3.00
22	26	20	22	12	18	29	17	16	20	19	19	23	21	28	9	9	45	44	3.64	2.83
23	20	24	24	20	22	24	22	13	18	19	17	19	19	13	18	19	57	39	2.00	3.00
24	19	15	20	10	24	20	15	10	15	20	20	16	17	13	8	19	29	51	2.00	2.00
25	20	22	22	20	16	20	24	16	20	19	19	19	28	16	13	15	32	50	2.19	3.00
26	18	18	26	21	25	16	23	18	16	18	21	18	26	26	20	23	91	69	2.75	3.13
27	20	22	25	20	16	22	28	26	28	19	14	22	22	30	20	21	75	65	2.89	3.36
an	19.7	21.7	24.0	17.9	20.5	20.3	20.8	19.9	20.6	17.9	19.2	20.3	23	20	12.8	15.5	69.7	64	2.91	3.04
SD	3.6	3.3	3.5	4.5	3.2	4.4	3.8	4.0	4.9	3.5	4.5	4.1	6.3	6.2	4.8	5.6	20.1	18.5	.54	.30
tional Mean													25	19	12	15				

Figure 1
RESULTS OF THE STUDENT INVENTORY
TO DETERMINE TEACHING EFFECTIVENESS

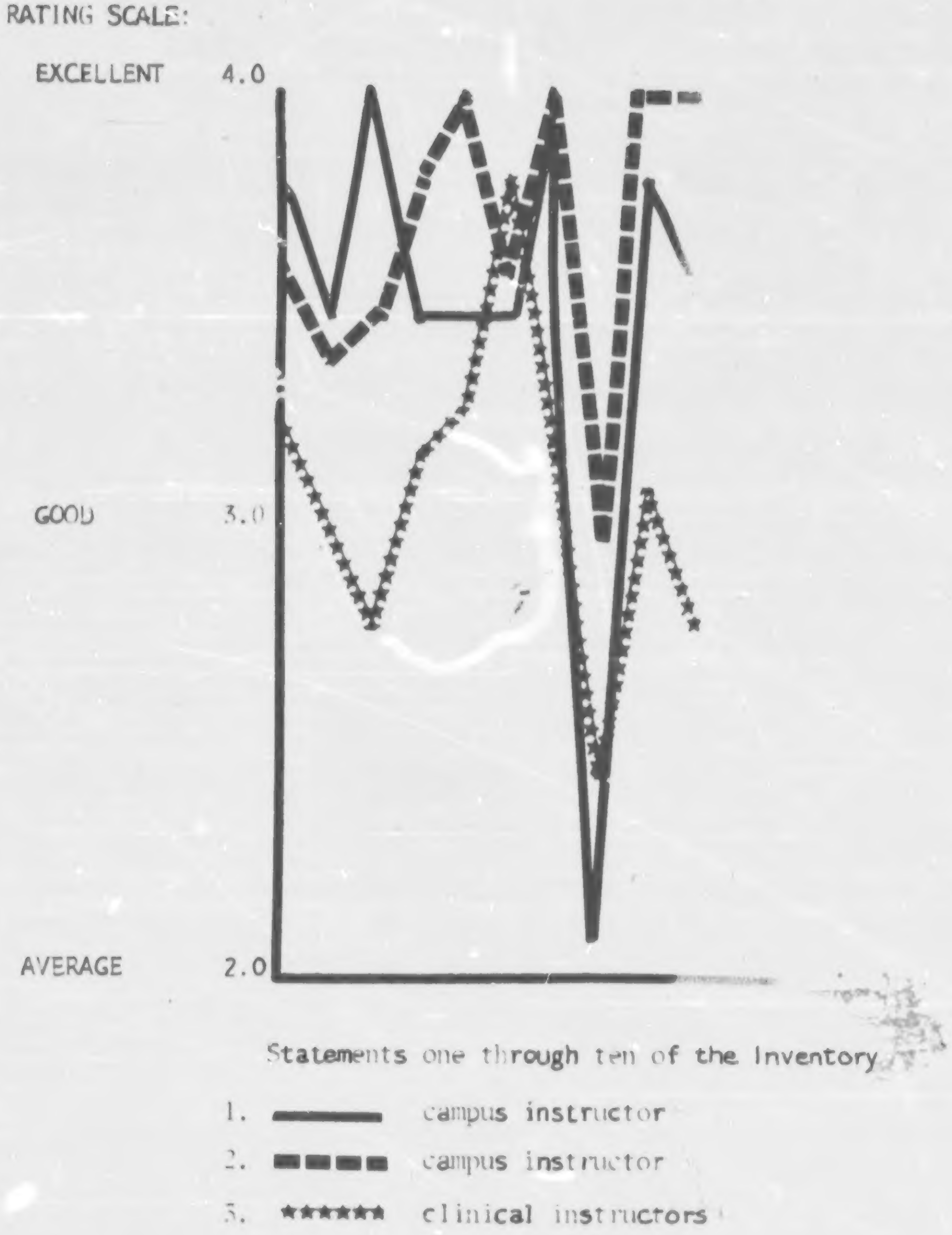
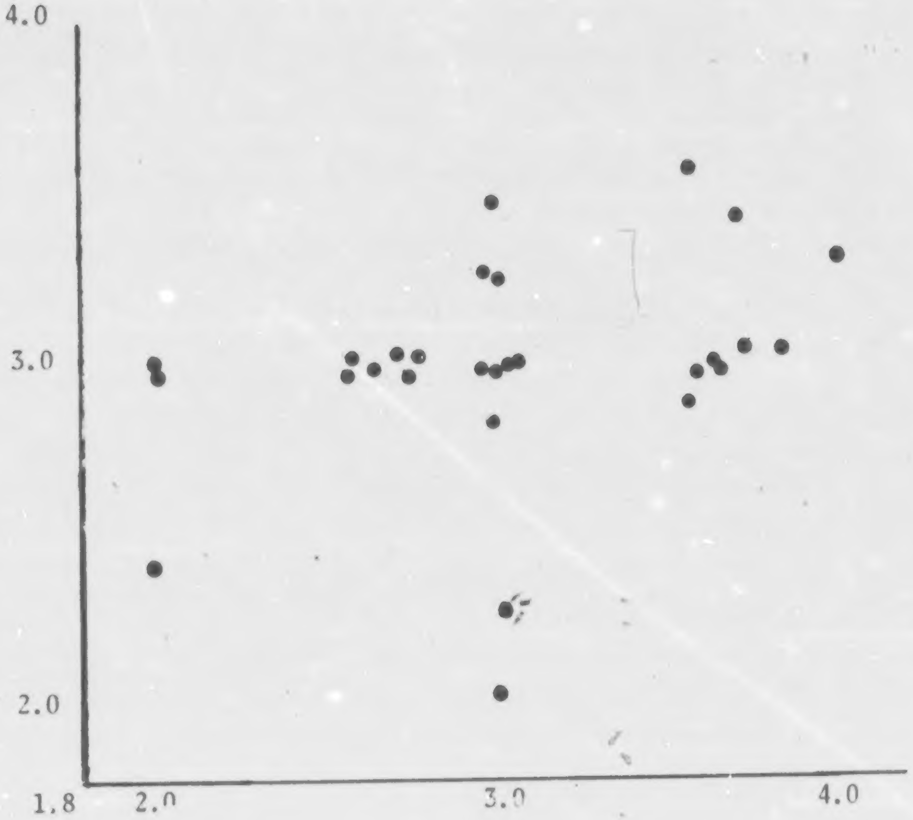


Figure II

SCATTER DIAGRAM OF STUDENT'S PAIRED GRADE POINT AVERAGE



X axis: Average at the beginning of study

Y axis: Average at the conclusion of study

Coefficient of correlation of (X,Y) equals o.387

Overlap is 14.9 percent.

Moderate relationship about .05

Chapter V

CONCLUSIONS AND RECOMMENDATIONS

A holistic approach, in a humanistic tradition, to effective teaching challenges educators to discover themselves and their students on several dimensions. The activities of the study were designed to guide instructors and students in developing self awareness and awareness of the classroom climate. This orientation stressed the value of non judgmental data of students and required instructors to clarify the goals and objectives of instruction in dynamic interactions based on individual aptitudes and perceptions.

Too frequently in health technologies archetypical qualities or patterns remain in the primal tradition; no prototype or pattern of instruction evolves whereby consideration of both individuals and standards may be developed and learning assessed in this context. Mere accumulation of information about students and teachers, while it may yield an impressive mass of data, will not improve instruction unless it is examined for its relevancy to a particular learning climate. Whenever teachers and students confront each other, interactions and their consequences begin. The quality of this interaction results not only from the instructor's teaching style, the student's aptitudes and learning style, but the effect these have upon the learning climate. The teacher's technical, therapeutic and conative competencies act as an instructional yeast to expand and enlarge the student's capacities.

Traditionally, in health technologies, educational aims have focused on a positivistic model, which has been tuned to entrance requirements, to the uniformities and regularities of the health profession. The holistic approach in this study attempted to reveal the particular learning and teaching patterns of each student and teacher, respectively. Whereas the traditional approach is concerned with certification and assessment, this study's functional humanistic approach looks at the various dimensions, intentions, behaviors, and interactions that shape the total person. This latter orientation sought to provide each individual in the learning climate insight into the unique contributions he could utilize to augment and enhance the educative relationships. Concern focused on the person as a whole, in his present actualities and future aspirations and particularly on his integration into the educational environment.

The first hypothesis asked the investigator to consider the definition of competencies in faculty as an avenue to give faculty access to a visibly functional system which extended their effectiveness. By this channel the criterion for a good instructor became the extent to which he was effective and efficient in helping students acquire the knowledge and skills of the health technology.

When faculty define student competencies, the main indicator of student achievement becomes the student's level of mastery of the stated achievement. This gives an almost computerized precision to learning and grading. In this usual approach to behavioral objectives the yeast has been overlooked. The instructional competencies whereby learning will be managed too frequently have been left to chance. Instructors, who were knwoledgeable of their own and their student's intellectual dispositions and learning styles, were in a better position to communicate effectively and organize the technical competencies students must master in the flexible combinations which will accommodate and enhance student differences. Having learned that as a group both instructors and students expressed a preference for reading as the major mode of learning, instructors extended lectures with a widened array of visual aids and reinforcements. To promote learning the range of the patterns for selected experiences was altered to meet individual needs. The main indicator of student achievement was his demonstrated ability to perform according to clearly stated mastery criteria. The technical competencies which instructors needed to direct and facilitate learning were also clearly delineated. In a mutually supportive atmosphere the scope and sequence for an individual pupil were directly related to his progress rather than any crystallized scheme. For the first time in the clinical area a grade of incomplete rather than failure became a reality as instructors accepted the managerial function as an inextricable part of instruction.

In this study, as in similar studies, measurement of teacher change must be inferential. Hypothesis two suggested that if teachers participate in in-service training they will give realistic support to an instructional approach and strategy designed to increase the precision with which instructors make decisions.

The decisions to use a certain means of instruction, to test by a variety of devices and to modify these to respond to student needs depend upon the teachers' knowledge of the total teaching - learning situation. It was felt by the instructors who participated in the in-service program that, although some material reiterated what had been learned previously, the group's assessment of its value and applicability to the health technology enhanced its usefulness to individual instructors. The personal dimensions and teaching style of teachers were discussed as out growths of the concern professionals in education and the health technology have for the improvement of an instructional program.

As a result of the in-service training, the instructional staff philosophized that inherent in planning curriculum and instruction lies the concept of a concerted faculty action which students will experience as a helping relationship. The therapeutic goals and objectives for defining instructional competencies developed from these sessions. It was felt that instructors, who react scientifically to planning teaching - learning situations and who enjoy the cooperation of the clinical community, have their own special needs and qualities. And they reasoned that these capabilities can best be expressed in a helping relationship, between instructors and students, which values the originality of individuals.

The informal team teaching approach, which developed between instructors teaching the different sections of the same course and which emphasized contiguity, reinforcement, and outcomes, was a vital and significant result of the in-service training. If nothing else it dispelled the lonely teacher syndrome. Because instructional goals and means were reappraised jointly and systematically, the courses of action became a concensus of instructors and students acting together.

The efforts of an organized team of teachers demonstrated that when teachers are stimulated through in-service training to examine their efforts cooperatively, instruction improved.

Hypothesis three offered instructors a keen new approach to identifying the role of the teacher who is also a practicing health technologist. The emphasis on intention, attitudes and will to teach was most noteworthy here.

Recognizing and accepting the need to teach students in the midst of meeting the exigencies of patient care required a special commitment to students. The results of the student's inventory by which the clinical instructors were considered most effective both in presenting knowledge and in knowing the discipline content certainly confirms this hypothesis. In the final analysis individuals express their intentions and will in their behavior. This group of instructors intended to teach and did so well that the student inventory given to assess teaching skills left only one item of the instructors' skills open for marked improvement. The instructors were unaware of the students' perceived need for a better organization of learnings in the clinical area until the inventory results were reviewed. This is an important discovery and reconciling this deficiency will not be easily accomplished because of the nature of the clinical work load.

The fourth hypothesis melds humanistic psychology and educational accountability. It is important not to exaggerate the significance of this pilot study without additional objective research. Certainly, however, the humanistic approach facilitated a fuller understanding of the individual persons studied, revealed commonalities among students and instructors and offered some promising beginnings in assessing individual difference for improving learning.

These desirable aims have been reached at some expense in objectivity because the inner department relationships, which are both tools and understandings, have emerged as changed behaviors in the participants. The instructional competencies defined in the study are clearly visible; the relationships which became the interactions of the study population could be challenged. However, one needs to consider that in dealing with individuals in a humanistic approach, progress is made in light of the accumulative effects of the total experience. The improved grade point average of the students upon conclusion of the study treatment suggests the humanistic approach to instruction promises to be more productive than the simpler tradition approach.

Implication for future research. The popular cult of accountability must not be allowed to lock educators into rigidly defined goals with efficiency as the only sought after goal. Educators need to seek means whereby the humanistic qualities which make education a deeply personal adventure become lucid and vitally relevant to instructors and students alike.

Educators have only begun to develop instruments, ways, and means to determine an individual's cognitive style. New techniques are needed to augment the present means of measuring cognitive styles, intellectual dispositions, attitudes, aptitudes and intentions of individuals as they teach and learn. The educational sciences can contribute to the humanization of education through investigative procedures which expose and honor the qualitative aspects of an individual as well as his quantitative successes.

In attempts to understand human behavior the proper focus must remain with the way the individual perceives himself and reacts with others according to his perception. Health technology instructors value excellence for obvious reasons and this proper concern for patient care must spill over into concern for students too. Means to help the student discover himself and actualize his potential will require that health technology instructors seek ways to restructure educational programs to be humanistically and educationally accountable.

Recommendations

(1) In order to offer students and teachers options in which learning is recognized as an active process of interaction, it recommended that instructors and students in health technologies explore their cognitive styles and intellectual dispositions through the appropriate inventories.

(2) In order to influence and direct the focus of educational accountability in the direction of a holistic humanistic approach, it is recommended that competencies for health technology instructors and students be defined in a functional visible framework. In human affairs there is no substitute for a reconciliation between excellence of performance and humanization of education.

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Chapter 3

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APPENDIX A

DEFINITION OF COGNITIVE MAPPING SYMBOLS

GOALS OF THE MEDICAL LABORATORY TECHNOLOGY PROGRAM

THE INSTRUMENT DESIGNED FOR AN INVENTORY OF STUDENT OPINIONS OF EFFECTIVE TEACHING

APPENDIX A

Cognitive Style Mapping Symbols and their Meaning (40)

1. Theoretical Symbols

T(VL)	Theoretical Visual Linguistic. A major strength in this indicates an ability to read and comprehend well.
T(AL)	Theoretical Auditory Linguistic. A major strength in this indicates an ability to comprehend through hearing spoken words.
T(VQ)	Theoretical Visual Qualitative. A major strength in this indicates an ability to read and comprehend mathematical symbols well.
T(AQ)	Theoretical Auditory Qualitative. A major strength in this indicate an ability to comprehend number and formulas through spoken words.

2. Qualitative Symbols Associated with Sensory Stimuli

Q(A)	Qualitative Auditory is the perception of meaning through hearing as demonstrated by the ability to distinguish purely sonic sensations.
Q(O)	Qualitative Olfactory is the perception of odors.
Q(S)	Qualitative Savory is an ability to distinguish among tastes.
Q(T)	Qualitative Tactile is the perception of touch temperature, and pain.
Q(V)	Qualitative Visual is the perceptions of meaning through sight.

Programmatic Qualitative Symbol

3. Qualitative Symbols Associated with Cultural Codes

Q(CEM)	Qualitative Code Empathetic is expressed in sensitivity to another's point of view.

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[40] Joseph E. Hill and Derek N. Nunney, Personalizing Educational Programs, Oakland Community College, Bloomfield Hills, Mich., c1974.

Q(CES)	Qualitative Code Esthetic is expressed in enjoyment of beauty in the environment or in ideas.
Q(CET)	Qualitative Code Ethic is the expressed in commitment to a set of values, principles, obligations and duties.
Q(CH)	Qualitative Code Histronic is expressed in fulfilling role expectancies.
Q(CK)	Qualitative Code Kinesics is expressed in body language.
Q(CKH)	Qualitative Code Coordination is the muscular coordination to follow the acceptable form in an activity.
Q(CP)	Qualitative Code Social is the ability to judge the social and physical distance that is comfortable and permissible to another.
Q(CS)	Qualitative Code Synoctics is self-awareness or self-knowledge.

4. Cultural Determinants

F	Family. The influence family ties and values exert on an individual as he makes decisions and relates to his environment.
I	Individual. The reliance and individual places upon his own desires, perceptions and goals as manifest in his behavior.
A	The reliance and individual places upon the perceptions, viewpoints, and actions of his peers in determining his own actions.

5. Modalities of Inference are the forms of inference an individual applies in decision making.

M	Magnitude is a form of categorical reasoning that classifies events, persons, and or objects in a logical sequence and relies on defining these as part of the act of sequencing.
D	Difference is a pattern of reasoning in terms of contrasts and comparisions of selected characteristics, measurements, and concepts.
R	Relationship indicates the ability analyze for components of a situation or concept and synthesize these into a relationship based on the dimensions of each component.

L Appraisal is a means of reasoning which employs all of the modalities above in a balanced assessment of the probabilities.

K Deductive refers to a way of using logical proof in an if - then relationship using a step by step approach.

GOALS OF THE MEDICAL LABORATORY TECHNOLOGY PROGRAM

1. The Programs for Medical Laboratory Technology furnish the community with medical laboratorians who can function to meet the unique and various needs of this community.

2. The Programs for Medical Laboratory Technology motivate students desiring higher education to progress to an advanced level.

3. The Programs for Medical Laboratory Technology provide educational flexibility which will allow students horizontal mobility.

4. The Programs for Medical Laboratory Technology include professionalism as evidenced by ethical and responsible behavior in the medical laboratory.

5. The Program for Medical Laboratory Technology acts as a catalyst in the community by identifying needs and providing facilities and expertise for continuing education in professional seminars and workshops.

6. The Program for Medical Laboratory Technology maintains open communication with professionals in the field as evidenced by their positive contributions to the program.

7. The Programs for Medical Laboratory Technology positively reinforce creativity in students without sacrificing precision and accuracy as indicated in student projects and research.

8. The Program for Medical Laboratory Technology counsels students who withdraw from the program to seek appropriate learning experiences.

9. The Program for Medical Laboratory Technology furnishes opportunity and incentives for the staff's continued development.

INVENTORY

DEAR STUDENT:

IT IS IMPORTANT TO ME TO KNOW IF I AM COMING ACROSS TO YOU IN WAYS THAT ARE IMPORTANT TO YOU AND ENHANCE YOUR LEARNING. PLEASE TAKE A FEW MOMENTS TO CLUE ME IN BY ANSWERING THIS QUESTIONNAIRE HONESTLY AND FRANKLY.

WHAT IS YOUR OPINION CONCERNING: RATE ACCORDING TO THE FOLLOWING SCALE, PLACE A CHECK IN THE APPROPRIATE COLUMN. (1) UNSATISFACTORY (2) AVERAGE (3) GOOD (4) EXCELLENT

	4	3	2	1
1. Do I appear to have a thorough knowledge and understanding of the subject matter we cover in class?				
2. Are the learning performance objectives I use clearly stated, understood by you and my assignments, requirements, and criteria definite?				
3. Do you think I deal fairly with all students and do not show favoritism in or out of class?				
4. Do I uphold professional standards and dress and serve as a model in this respect for you?				
5. Can you come to me with problems knowing you will get friendly, sympathetic consideration?				
6. Are you being challenged to do your best (to work to your potential?)				
7. Do I show my enthusiasm for medical laboratory science and share it with you?				
8. Do I appear to be organized and efficient, are lesson guides and objectives given out on time and are your responsibilities for meeting deadlines clear to you?				
9. Has what you learned in the previous classes I taught transferred to your new experiences in the hospital? (To be answered only by students in clinical practicum)				

10. All things considered if you had to give me just one grade as I do you at the end of a semester, what would it be?

    A B C D (circle one)

11. As an instructor, what is my most outstanding feature?

12. And what is my worst feature?

13. Choose the one word given below which best expresses my teaching style.

    1. Indifferent
    2. Permissive
    3. Authoritarian
    4. Flexible

14. Any comments you care to make?

DO NOT SIGN.

THANK YOU.

YOUR MLT INSTRUCTOR

APPENDIX B

COMPETENCIES FOR MEDICAL LABORATORY TECHNOLOGY INSTRUCTORS

FORM A

IDENTIFYING TECHNICAL BEHAVIORS IN HEALTH TECHNOLOGY INSTRUCTORS

DISCIPLINE: MEDICAL LABORATORY TECHNOLOGY

SITE: COMMUNITY COLLEGE

CATEGORY	BEHAVIOR
CURRICULUM	GIVEN IN-SERVICE TRAINING IN THE CONCEPT OF COMPETENCY BASED EDUCATIONAL PROGRAMS THE INSTRUCTOR WILL:

1. design superior courses appropriate in content and based on a needs analysis for the stated goals of the health technology;
2. in stating course goals begin at the point where the axes of the discipline content and the thinking abilities of the students intersect;
3. in building program courses analyse, classify and specify the objectives in a hierarchial framework suitable for sequential mastery of professional skills;
4. in generating course objectives specify these variables (a) behavior student in
    - (1) cognitive domain
    - (2) psychomotor domain
    - (3) affective domain

    (b) performance criterion
    (c) condition of learning climate
    (d) degree of mastery;

FORM A

IDENTIFYING TECHNICAL BEHAVIORS IN HEALTH TECHNOLOGY INSTRUCTORS

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SITE: COMMUNITY COLLEGE

CATEGORY	BEHAVIOR
	5. in formulating objectives provide the panorama of course objectives in a taxonomy which allows comparisons, facilitates construction of instructional materials and is visible to students.

FORM B

IDENTIFYING THERAPEUTIC BEHAVIORS IN HEALTH TECHNOLOGY INSTRUCTORS

DISCIPLINE: MEDICAL LABORATORY TECHNOLOGY

SITE: COMMUNITY COLLEGE

CATEGORY	BEHAVIOR
CURRICULUM	GIVEN THE RESPONSIBILITY FOR CURRICULUM DESIGN THE INSTRUCTOR WILL: 1. accept the conviction that disadvantaged students can learn and will provide appropriate courses based on "readiness to learn" concept in an atmosphere of positive expectancy; 2. accept the responsibility for turning out a good product and therefore create and maintain a humane atmosphere in which students are advised into courses which strengthen their deficiencies and augment their strengths; 3. explore the assumption that there is significant commonalty among health careers and design an integrated basic medical science course covering aspects of human anatomy and physiology, microbiology, pharmacology, electronics, and biochemistry; 4. give credit for non-traditional studies through challenge examinations, when this mechanism will enhance student progress without diluting skills and expertise;

FORM B

IDENTIFYING THERAPEUTIC BEHAVIORS IN HEALTH TECHNOLOGY INSTRUCTORS

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CATEGORY	BEHAVIOR
	5. admit students to the program a minimum of three times a year, through modularization of courses by providing a logical systematic process for matriculation into the program in sequential steps, which does not discriminate against culturally different people, but which includes an assessment of student aptitudes and dimensions;
	6. provide a logical sequence of courses for program completion, based on clearly stated criteria for prequisities.

FORM C

IDENTIFYING CONATIVE BEHAVIORS IN HEALTH TECHNOLOGY INSTRUCTORS

DISCIPLINE: MEDICAL LABORATORY TECHNOLOGY

SITE: COMMUNITY COLLEGE

CATEGORY	BEHAVIOR
CURRICULUM	GIVEN THE RESPONSIBILITY FOR MAKING CURRICULAR DECISIONS,THE INSTRUCTOR WILL: 1. beginning with the mission statement plan systematically to include humanization and personalization as an integral part of the educational process; 2. distinguish between educational means and ends by stressing both substance and form in this major components of his curricular model; 3. provide for differences among students in their styles of learning by providing them with various alternatives which are compatible with the instructors teaching style; 4. hold himself accountable for the extent to which students acquire the desired competencies within the limits of the students aptitudes and learning readiness; 5. support the clinical phase of the students' experience as the needs of the clinical area dictate and the student's professional development requires.

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IDENTIFYING TECHNICAL BEHAVIORS IN HEALTH TECHNOLOGY INSTRUCTORS

DISCIPLINE: MEDICAL LABORATORY TECHNOLOGY

SITE: COMMUNITY COLLEGE

CATEGORY	BEHAVIOR
INSTRUCTION	GIVEN IN-SERVICE TRAINING IN DESIGNING LEARNING PERFORMANCE OBJECTIVES, THE INSTRUCTOR WILL: 1. distinguish between learning conditions and characteristic of human behavior; (42) 2. in applying behavoristic psychology and learning theory, sequence objectives in order of their complexity; 3. in establishing pre-learning behavior, design objectives which require the learner to discriminate among variables (multiples); 4. in establish learning readiness, design objectives which elicit a response from the learner (echoic behavior); 5. in establishing chain or sequence responses, design objectives which separate the tasks of a complex performance sequentially; 6. in facilitating association practice, design objectives which use a three-step chain to stimulate the student observe, to code his observation, and to specify the outcome of steps one and two;

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[42] Miriam B. Kapfer, Behavioral Objectives in Curriculum Development Educational Technology Publications, Englewood Cliffs, New Jersey, c1971, p. 56.

FORM A

IDENTIFYING TECHNICAL BEHAVIORS IN HEALTH TECHNOLOGY INSTRUCTORS

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SITE: COMMUNITY COLLEGE

CATEGORY	BEHAVIOR
	7. in establishing objectives for mastery of concepts, establish associations which prompt the student to classify a variety of stimuli into a generalization applicable to other stimuli;
	8. in specifying objectives for mastery of concepts, propose a chain of events or ideas from which the student can deduce a fundamental truth, a primary or basic law and/or the essential consituent, (deductive reasoning);
	9. in helping students to become problem solvers, present a set of principles in a manner which requires the student to assemble these principles into a higher order principle. (inductive reasoning);
	10. in assisting students to become practicing health technologists require the student to organize his information into a strategy for solving clinical problems. (example: design of a flow chart for processing a clinical specimen for bacteriological examination and identification);
	11. in providing learners with relevant learning and practice opportunities, apply educational technology, whichis appropriate for the objective the student is asked to master and the student's cognitive style.

FORM B

IDENTIFYING THERAPEUTIC BEHAVIORS IN HEALTH TECHNOLOGY INSTRUCTORS

DISCIPLINE: MEDICAL LABORATORY TECHNOLOGY

SITE: COMMUNITY COLLEGE

CATEGORY	BEHAVIOR
INSTRUCTION	GIVEN A FUNCTIONAL LABORATORY CLASSROOM AND EDUCATIONAL TECHNOLOGY, THE INSTRUCTOR WILL: 1. plan instruction to allow for different learning styles and speeds of the diverse student population seeking to become health technicians; 2. seek to reduce student attribution from the health technology program through a practical program of rational personal counceling, which addresses the less tangible needs of students, (life adjustive and financial difficulties): 3. recognize that health care is an imperative need and when community needs are in conflict with student needs and abilities, use a non-punitive system of grading; 4. focus on exit skills, not on admission standards; 5. cultivate a vital friendly relationship with the class as a whole by inviting the class to share the joy of learning in team activities which offer opportunities for leadership and responsible action; 6. develop a rapport with the clinical instructors in the consortium of hospitals which encourages their input into the campus activities;

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CATEGORY	BEHAVIOR
	7. plan instruction which uses instructional teaching styles to their best advantage and appraise students of instructors' strengths;
	8. consider an instructor the students; most valuable resource and make this resource responsive to his academic needs;
	9. function in the technologist's role in a manner which serves as a model for the student, which exemplifies professional behavior and standards.

FORM C

IDENTIFYING CONATIVE BEHAVIORS IN HEALTH TECHNOLOGY INSTRUCTORS

DISCIPLINE: MEDICAL LABORATORY TECHNOLOGY

SITE: COMMUNITY COLLEGE

CATEGORY	BEHAVIOR
INSTRUCTION	GIVEN STUDENTS TO TEACH, THE INSTRUCTOR WILL: 1. use pedagologic techniques which promote students to progress toward professional growth by establishing a helping not dominating atmosphere; 2. relate to students with understanding rather than condemation; 3. be self-revealing, disclose his feelings and encourage students to accept their feeling as significant but subject to change in positive ways; 4. show concern with larger events, view issues in the broad connotation of events, perceive the extensive implications of the immediate events and, more importantly share these perceptions with students for their ultimate welfare; 5. demonstrate the value of his and his students' integrity in non-permissive action and interaction; 6. tolerate some dissonance from students as their response to pressure and stress, but help to ease this dissonance by rational counseling; 7. appropriate the role of one committed to the helping process and encourage students in the process of search and discovery;

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CATEGORY	BEHAVIOR
	8. organize course content to emphasize concepts, generalizations and principles, but stress mastery of the skills of the health technology because these are the skills of the students which open the world of work to him; 9. view education for a health technology as a holistic task likely to involve every aspect of the health technician's tasks - subject matter, techniques, skills, ethics, human growth and cooperation, clinical structure and administration; 10. accept the premise that the instructor is the student's first visible evidence of the health technology in operation and will therefore influence the student's behavior in the clinical situation; 11. plan and organize instruction and use of technology with other instructors in the department to maintain continuity of learning experiences for students.

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IDENTIFYING TECHNICAL BEHAVIORS IN HEALTH TECHNOLOGY INSTRUCTORS

DISCIPLINE: MEDICAL LABORATORY TECHNOLOGY

SITE: COMMUNITY COLLEGE

CATEGORY	BEHAVIOR
EVALUATION	BEING COMMITTED TO THE PRINCIPLE THAT EVALUATION PROVIDES IMMEDIATE FEEDBACK REGARDING THE ADEQUACY OF THE STUDENTS' RESPONSE TO AN INSTRUCTIONAL PROGRAM, THE INSTRUCTOR WILL: 1. establish performance standards which make explicit the instructor's expectations of student achievement; 2. distinguish between class performance and individual performance objectives; 3. prepare and distinguish between special tests to evaluate readiness to undertake particular educational tasks and mastery criteria; 4. appraise specific selected learning situations to ascertain the instructional needs of students through student evaluation of instructors and subsequently act upon the expressed student needs to increase the efficiency of instruction; 5. evaluate self as the real key to the effective analysis of the instructor's contribution to the improvement of instruction, (formative evaluation);

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CATEGORY	BEHAVIOR
	6. recommend curricular and instructional changes based on knowledge of the student's status and the profession's requirements gained through pertinent data;
	7. evaluate innovation and changes in curriculum or instruction on the basis of their relevancy to the health technology and the students progress;
	8. cooperate with the department chairman in summative evaluation of the entire range of the program.

FORM B

IDENTIFYING THERAPEUTIC BEHAVIORS IN HEALTH TECHNOLOGY INSTRUCTORS

DISCIPLINE: MEDICAL LABORATORY TECHNOLOGY

SITE: COMMUNITY COLLEGE

CATEGORY	BEHAVIOR
EVALUATION	BEING COMMITTED TO THE PHILOSOPHY OF USING CRITERIA TO MEASURE TEACHER EFFECTIVENESS, THE INSTRUCTOR WILL:

1. provide a formal process whereby students may indicate to the faculty different aspects of a teacher's performance through the use of specific multiple questions designed to yield data that will assist instructors in self-evaluation and yield mutually positive effects;
2. induct new teachers into the department by communicating in tangible ways the school's policies, reward system and in-service opportunities;
3. individualize instruction through an evaluation of students' cognitive styles, personal dimensions and aptitudes;
4. monitor student progress in relation to his academic aptitudes and aspirations, counsel appropriately accordingly; recognize that no intelligence test score measures personal worth and avoid rejecting any student whose aptitude for academic pursuits is low;
5. monitor and question the directions of the students' learning experiences for their relevancy to the current state of medical art and modify practices which are outdated or have become irrelevant;

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CATEGORY	BEHAVIOR
	6. work within the department in colleague to colleague relationships to ensure that all student enrolled in specific courses master the same specific skills even though instructors and educational technology vary;
	7. meet with students, work with them and help them develop their minds and personalities generously as time permits;
	8. appraise the professional contribution of instruction to students using the above objectives as criteria;
	9. cooperate with the department chairman (program director) in formative evaluation for improving the quality of instruction.

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SITE: COMMUNITY COLLEGE

CATEGORY	BEHAVIOR
EVALUATION	BEING COMMITTED TO ACHIEVING COMPLEX OBJECTIVES IN THE COGNITIVE AND AFFECTIVE DOMAIN AND REALIZING THAT THE MERE STATEMENT OF A COMPLEX OBJECTIVE DOES NOT MEAN ITS INTENT WILL BE REALIZED BUT THAT THIS OBJECTIVE REQUIRES MOTIVATION AND FAR MORE SOPHISTICATED LEARNING AND EVALUATIVE EXPERIENCES THAN OBJECTIVES IN THE LOWER DOMAIN, THE INSTRUCTOR WILL: 1. coordinate the efforts of several teachers in assessing the student's mastery of complex objectives; 2. conduct seminars in which both students and teachers are involved in an interactive manner in which significant growth and change may be positively reinforced and informally assessed; 3. encourage students to find ways of understanding and determining what objectives are central and significant to their personal development as a practicing health professional. (evaluate their clinical experience);

FORM C

IDENTIFYING CONATIVE BEHAVIORS IN HEALTH TECHNOLOGY INSTRUCTORS

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CATEGORY	BEHAVIOR
	4. explain the internalization process to the student as he attends to the clinical phenomena and climate of the health technology, responds to it, values it, and acquires a value complex which characterizes his way of life; then provide him with a measuring scale upon which he and his instructors can record his commitment to professional ethics and standards of behavior.

FORM A

IDENTIFYING TECHNICAL BEHAVIORS IN HEALTH TECHNOLOGY INSTRUCTORS

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CATEGORY	BEHAVIOR
COLLEGE SERVICE	ACCEPTING THE RESPONSIBILITY FOR PARTICIPATING IN THE INTERNAL INSTITUTIONAL GOVERANCE SYSTEM, THE INSTRUCTOR WILL: 1. attend advisory committee meetins when requested; 2. accept college assignments outside his regularly scheduled classes willingly; 3. accept speaking engagements in the community; 4. actively recruit students through the auspices of counseling services in the college and local high schools; 5. give academic counseling to students; 6. tutor students as time permits; 7. assist his administrator in preparing the department budget; 8. maintain at all times a functional laboratory classroom, preserve equipment and monitor instruments; 9. apply the techniques of quality control in the classroom laboratory; 10. attend career fairs and vocational education conferences.

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CATEGORY	BEHAVIOR
COLLEGE SERVICE	GIVEN THE COLLEGE POLICY HANDBOOK AND IN ACCORDANCE WITH COLLEGE AND DEPARTMENT POLICIES, THE INSTRUCTOR WILL: 1. contribute to staff meetings and use this channel to provide the program director with insights into student behavior and needs; 2. participate in professional training programs to appraise counselors and other instructors of the peculiar demands of health professions and the stress this may cause in students; 3. participate in placement and follow-up studies; 4. establish a channel of effective cooperative through interaction with the instructors in other disciplines who instruct health technology student; 5. follow college policies in interactions with students, explain the reasons to students; 6. in choosing activities, consider the instructional needs of students his first priority, but respond appropriately to college concerns and activities as time permits.

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SITE: COMMUNITY COLLEGE

CATEGORY	BEHAVIOR
COLLEGE SERVICE	ACCEPTING THE PREMISE THAT ONE ROLE OF THE TEACHER TO BE THAT OF A CONDITIONER OF EMOTIONAL REACTIONS, THE INSTRUCTOR WILL: 1. express enthusiasm for the college and the community in his daily encounters with students; 2. guide students to unpredicted but meaningful conclusions as they respond to the dynamics of the changing college situation; 3. on a selective basis attend student artist series and college social events.

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CATEGORY	BEHAVIOR
PROFESSIONAL ACTIVITIES	GIVEN THE DUAL ROLE OF FUNCTIONING AS A HEALTH TECHNOLOGIST AND AN EDUCATOR, THE INSTRUCTOR WILL: 1. maintain currency in certification in the health technology; 2. maintain licensure according to the state law; 3. maintain a viable teacher's certificate; 4. participate in proctoring examinations for the national and state certifying societies; 5. provide in-service training for clinical instructors in the consortium of hospitals; 6. serve on state curriculum committee when appropriate.

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CATEGORY	BEHAVIOR
PROFESSIONAL ACTIVITIES	HOLDING A HOLISTIC HUMANISTIC VIEWPOINT OF TEACHING, THE INSTRUCTOR WILL: 1. provide small group seminars which allow students to give reports from journals and discuss their meanings; 2. supervise research projects students have interest in performing and encourage students to report these appropriately; 3. attend seminars, workshops, and conventions with students; 4. review textbooks and publications for their applicability to the community college students; 5. prepare instructional materials suitable for helping community college students master the skills of the health technology.

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DISCIPLINE: MEDICAL LABORATORY TECHNOLOGY

SITE: COMMUNITY COLLEGE

CATEGORY	BEHAVIOR
PROFESSIONAL	ACCEPTING THE RESPONSIBILITY FOR PERFORMING PROFE[illegible] AND IN ORDER TO REMAIN STIMULATING TO S[illegible], THE INSTRUCTOR WILL: 1. serve actively in professional societies for purpose of keeping abreast of changes in his discipline; 2. hold office in professional societies when this enhance his personal development and reflects positively on the college; 3. conduct research, prepare papers and present these before professional groups; 4. publish instructional materials suitable for use in the community college; 5. represent the college's interest in the health technology to the community as he interacts with other professionals in the community in roles other than part of a teacher.

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IDENTIFYING TECHNICAL BEHAVIORS IN HEALTH TECHNOLOGY INSTRUCTORS	
DISCIPLINE: MEDICAL LABORATORY TECHNOLOGY	
SITE: COMMUNITY COLLEGE	
CATEGORY	**BEHAVIOR**
CONTINUING EDUCATION	GIVEN THE RESPONSIBILITY FOR OFFERING CONTINUING EDUCATION TO THE COMMUNITY, THE INSTRUCTOR WILL: 1. open the laboratory - classroom for workshops and seminars as regularly scheduled classes permit, and participate in these; 2. sponsor commercial workshops of superior quality as time permits, and participate in these; 3. assess the needs of the clinical community and respond to these as talents and resources permit.

FORM B

IDENTIFYING THERAPEUTIC BEHAVIORS IN HEALTH TECHNOLOGY INSTRUCTORS

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CATEGORY	BEHAVIOR
CONTINUING EDUCATION	HAVING ACCEPTED THE RESPONSIBILITY FOR HELPING CLINICAL INSTRUCTORS TO UNDERSTAND THE FORCES THAT DETERMINE THE NATURE OF THEIR MOTIVATIONAL FORCES, THE INSTRUCTOR WILL: 1. offer a program of cognitive and personality inventories to the clinical instructors; 2. share the insights gained through the instruments with the clinical faculty in personal conferences and small group discussions; 3. guide the group into an awareness of self and the uses their perceptions have in their interactions with students.

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CATEGORY	BEHAVIOR
CONTINUING EDUCATION	A. HAVING ACCEPTED THE PREMISE THAT THERE IS NO ONE STYLE OF TEACHING, NO ONE PATTERN OF ORGANIZATION, NO UNIVERSALLY ACCEPTED LEARNING THEORY, THE INSTRUCTOR WILL CONTINUE HIS OWN EDUCATION IN: 1. the psychology of learning as it applies to teaching; 2. the use of group problem solving techniques; 3. innovations and experimentation in curriculum and instruction; 4. supervisory techniques and how to apply them through extension courses, graduate school and/or continuing education credits. B. BECAUSE THE KNOWLEDGE OF THE HEALTH DISCIPLINE CHANGES RAPIDLY, THE INSTRUCTOR WILL MAINTAIN RELEVANCY THROUGH THE APPROPRIATE PROFESSIONAL CHANNELS OPEN TO HIM THROUGH THE COMMUNITY, HIS PROFESSIONAL ORGANIZATIONS, AND PUBLIC HEALTH AGENCIES.

APPENDIX C

UNEDITED STUDENT OPINIONS OF EFFECTIVE TEACHING

APPENDIX C

To be a good teacher isn't just a skill or a job but an art - a true talent. Many people have this talent and don't know it, but are fantastic teachers. I don't think that there is any specific list or criterion that a person must have to be a good teacher but the attitude of the teacher is of utmost importance.

To me, a teacher could throw any number of thoughts or lessons at me but if he/she was not sincere or interested in them herself it would be almost meaningless. A teacher must enjoy the field or subject she is teaching to be able to pass information on to have the knowledge is important but to impress that knowledge a teacher must gain the interest of a student in that field in order to fully educate the student in the subject.

Of the teachers I have trained under there was one, in particular, who truly enjoyed her work. She did not allow her job to come boring, for me or her. I feel that her enthusiasm gained my interest and aided me in learning. She can communicate with me on my level, which is another important feature of a good teacher. By giving me the responsbility of handling a situation alone and making mistakes, she gives me a true learning experience. I also feel that giving examples is important many teachers do give examples. I suppose that this is part of good communication.

Student #1

Clinical teacher who has taught me most. This teacher helped me learn more because I did more. In bacti, so far I learned far more about identifying bacteria from her than any lecture or book. I listened and watched her working time after time but she had sense enough to know that I'd never learn it until I did it myself. She had two qualities in addition to the five below which really helped me. I felt she had accepted the fact very well that students make a great deal of mistakes and also that she was not afraid to say occasionally that she simply did not feel like teaching you something especially tedious or time consuming at a particular moment. This I respect because to me it doesn't make sense that a teacher has to feel perfect all the time. Her students don't so why should she (or he)? She always found the opportunity to return those explanations or test procedures tho, so they would not be missed. All this carried over into Serology and held true probably even more than in doing cultures. Mainly I learned by doing cultures. Mainly, I learned by doing and this was very valuable to me.

Attributes of a good teacher. Sense of humor; patience; the ability to understand and accept the fact that something is never taught the same way twice and that many times it has to be approached differently for two different people before learning and not regurgitation is accomplished; flexibility; and ability and desire to put themselves as teachers into the learning situation. Teachers should be the same person at their job as they are at home with no mask of shield put on only when teaching.

Her style. The main point to be made here was that she taught you in a good teacher to student ratio. When trying to get me to understand something she was definitely the teacher and I the student. Her personality allowed good rapport, while her maintainence of her position reminded me over and over that I was there to learn.

Student #2

Attributes of a good teacher. Much knowledge of the material she teaches; ability to conduct a disciplined class but at the same time have a relaxed and open atmosphere. Allow for student opinions and questions; organize material which is presented so we can take notes in an orderly way. When I reread my notes I like to be able to understand and follow them; good, clear speaking voice. Mumbling and soft voices are too hard to understand and patience with those who don't understand and need something re-explained or repeated.

This particular teacher used diagrams on the chalk board to put things in an orderly fashion. She used slides to illustrate actual pictures of what she lectured to us. We did not listen to tapes that were "above our heads" nor did we use textbooks that were above our heads. We learned strictly from her lectures, tapes and slides and all the notes we took. We had no textbooks.

This teacher's style was to speak clearly and slowly giving us time to take notes on what she was telling us. Our lectures were fun. She was serious about the material, but at the same time she often teased with us. She realized the material was not easy and she never tried to make us feel stupid.

Student #3

The ideal teacher is one that remembers what its like to be a student. He totally understands students and can put himself on the same level as the student. He doesn't mind taking the time to explain something until it is fully understood. And he doesn't mind repeating himself a million times (if needed) to help the student understand. A good teacher is one that will work along with the student and not just order them about. I understand that teachers are human also, and many could not remain in the best of spirits all the time, but I've had one that has come pretty close.

The person that taught me the most was herself, a student at the time she helped me. She since then has graduated and is still working at the hospital. She worked along beside me, offering her own little helpful hints. She never told me to do anything or how to do it, she worked right beside me. I didn't feel that I was doing anything because I had to . I did it because I wanted to.

Her style of teaching was very consistent. She was firm in her opinions, but never pushy or forceful. She didn't force me to learn a thing but she encouraged me greatly after she knew I had the desire to learn.

Student #4

Needed qualities of a good teacher. Must be able to motivate and instill the desire and need to know; must have an equal interest in subject matter and students needs; and must have a desire to succeed and produce successful students, in the bureaucratic administrative world of todays education system, a good teacher must walk a delicate tight rope keeping the needs of the student balanced with the needs of the administrators. In case of an imbalance a good teacher keeps in mind the fact that the administrators have long since received their education.

At St. Lukes, one instructor stands out as an outstanding example of what a good teacher should be. She takes the time and effort to point ways that help improve the procedure, is very patient with the student, and at the end of the instructional and practical period, expects perfection and I can find no reason why she shouldn't

Student #5

What makes a good teacher. One who truly cares whether or not you learn anything; one who doesn't follow the saying "do as I say, not as I do;" one who will also put forth a little bit of effort to help you and one who makes you "think" rather than give you a simple answer for everything.

Practices of a good teacher. When you ask her a question, she in return asks you a question referring to your question, which makes you think and work your own question out. This has really helped me personally. She makes you think things out, and usually, she makes you answer your own question by asking a question back.

Sure, its much simpler for her just to give you an answer, but it seems to stick with me more when I'm made to think about it myself. She doesn't sympathize with you when you are hesitant to do something. She says "get out there and do it, thats the only way you are going to learn." She really eggs you on, and this has really been beneficial for me.

Personal attributes. She doesn't make you feel guilty for the things you do wrong; she keeps after you until you do it right; she's understanding, yet she doesn't pamper you, and she really cares, (as long as you care yourself) and she also makes things interesting by keeping your mind going at all times

Student #6

BIOGRAPHICAL SKETCH

Laura Adina Wiesenfeld graduated from Henry Clay High School in Lexington, Kentucky. She obtained a Bachelor of Science in August, 1937 from the University of Kentucky. Following this she spent a year in graduate school majoring in Medical Laboratory Science. In 1966 she earned the Masters of Education from the University of Florida.

She is a Registered Medical Technologist (ASCP) and is licensed as a Director of Laboratories under the Florida Clinical Laboratory Act.

She served variously as a microbiologist, clinical chemist and chief technologist in clinical and research laboratories. She taught religion, chemistry and biology at St. Johns Country Day School in Orange Park, Florida.

Presently, she is Director of Medical Laboratory Technology at Florida Junior College at Jacksonville.

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